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## Report

# First Half 2016 Operations and Monitoring Report *Remedial Action Pilot Study*



Former J.H. Baxter & Co. Wood Treating Facility  
Arlington, Washington

Prepared for

**U.S. Environmental Protection Agency**  
Region 10

1200 Sixth Avenue  
Seattle, WA 98101

Submitted by

**J.H. Baxter Team**  
P.O. Box 10797  
Eugene, OR 97440

FILE COPY



September 2016

Prepared by



55 SW Yamhill Street, Suite 300 - Portland, OR 97204  
P: 503.239.8799 F: 503.239.8940  
info@gsiws.com www.gsiws.com

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## Transmittal

To:	Jan Palumbo	From:	Renee Fowler
Address:	U.S. Environmental Protection Agency, Region 10 1200 6th Avenue, Suite 900 Seattle, WA 98101-3140	Date:	September 22, 2016
Re:	First Half 2016 Operations and Monitoring Report, Remedial Action Pilot Study		

Attachments    For Review    Please Comment    X For Your Use

Date	Number of Copies	Description
September 2016	1	First Half 2016 Operations and Monitoring Report, Remedial Action Pilot Study



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## 1. Significant Developments This Period

The recirculation trench has operated as designed with a total flow rate of approximately 42 to 50 gallons per minute (gpm) from extraction wells EW-1, EW-2, EW-4, and EW-5. There have been no high alarms since rehabilitation of the system in July 2015.

The pentachlorophenol (PCP) concentrations during the first and second quarter monitoring events in 2016 have decreased in several wells, including multiple downgradient wells. This suggests the effects of the rehabilitations of the recirculation system and addition of the in situ submerged oxygen curtains (iSOCs) are reducing concentrations downgradient of the system. See Section 4.2 for more details regarding PCP concentrations observed during the first half of 2016.

The Hanner property was sold to Yacht Properties. This property has no soil contamination associated with the federal Resource Conservation and Recovery Act (RCRA) project, but a groundwater plume exists beneath the property. Baxter will continue to have access to the monitoring wells on the Hanner property for replacing iSOCs, well maintenance, and monitoring. Should other remedial activities be required, access will be provided as appropriate.

## 2. Introduction

The J.H. Baxter Team, consisting of J.H. Baxter & Co. (Baxter) and GSI Water Solutions, Inc. (GSI), has prepared this *First Half 2016 Operations and Monitoring Report – Remedial Action Pilot Study* (O&M report) for the former J.H. Baxter wood-treating facility (Site) that currently is operated by McFarland Cascade Holdings, Inc. (a Stella-Jones Company), located at 6520 188<sup>th</sup> Street NE in Arlington, Washington (Figure 1). This report has been prepared for the U.S. Environmental Protection Agency (EPA) to document the results of groundwater monitoring and remedial action for the Site during the first half of 2016 (January 1, 2016, to June 30, 2016).

The Remedial Action Pilot Study is considered to be part of the ongoing Corrective Measures Study (CMS; Baxter, 2011), which is being implemented pursuant to Paragraph 53 of the EPA Administrative Order on Consent (AOC) dated April 30, 2001 (EPA, 2001). CMS-related activities were conducted consistent with guidance provided by EPA in the RCRA Corrective Action Plan (Final), dated May 1994 (EPA, 1994); Corrective Actions Advance Notice of Proposed Rulemaking (EPA, 1996); and the AOC.

This semiannual report fulfills the documentation required for the ongoing operations and maintenance (O&M) related to the *Remedial Action Pilot Study Work Plan* (Baxter, 2007a) and *Remedial Action Pilot Study Performance Monitoring Plan* (PMP; Baxter, 2007b), which were submitted to EPA in 2007.

### 3. Remedial Action Pilot Study

The Remedial Action Pilot Study was designed to enhance in situ bioremediation and passive recovery of light non-aqueous phase liquid (LNAPL). The pilot study includes an extraction well network, infiltration trench, recovery wells, and monitoring well network (Figure 2). The pilot study installation was completed in January 2008, with six additional monitoring wells added in 2010.

The purpose of the enhanced in situ bioremediation (the recirculation system) is to increase groundwater pH for favorable conditions for biodegradation of PCP. The system also adds oxygen by pumping the reduced water and allowing it to cascade through the vadose zone, picking up oxygen before reaching the groundwater table. The recirculation system uses four extraction wells to extract affected groundwater, which is pumped in an infiltration trench upgradient of the extraction wells. The infiltration trench is composed of basalt gravel and limestone rock, which increases the pH of the affected groundwater when contact is made. Additionally, LNAPL is passively recovered in five recovery wells with the installation of sorbent socks.

### 4. Operations, Maintenance, and Monitoring

Routine monitoring changed from monthly to quarterly in July 2010 with EPA's approval (EPA, 2010). EPA approved another reduction in reporting from quarterly to semiannual O&M reports in its May 18, 2015, letter (EPA, 2015b). Routine monitoring includes:

- Record groundwater level measurements in the monitoring well network.
- Collect groundwater samples from the monitoring well network.
- Collect a composite groundwater sample from the extraction wells.
- Inspect the sorbent socks in the recovery wells and replace if saturated.

#### 4.1 Groundwater Level Measurements

Groundwater monitoring events occurred on February 28 and 29, 2016, for the first quarter of 2016 and June 5 through 7, 2016, for the second quarter of 2016. The groundwater elevations from the first and second quarter 2016 monitoring events, and the past three monitoring events, are presented in Table 1.

A groundwater elevation contour map of the first and second quarter 2016 monitoring events are presented in Figures 3 and 4, respectively. At the time groundwater measurements were collected, extraction wells EW-1, EW-2, EW-4, and EW-5 were running.

The groundwater elevation at monitoring well MW-37 during the second quarter of 2016 is suspect and likely a field measurement error, as the groundwater elevation is approximately 10 to 15 feet higher than the anticipated elevation for the time of year (Figure A-22 in Appendix A).

Appendix A provides additional figures with more detailed analysis of groundwater elevations across the Site and information about operation of the recirculation system.

Figure A-1 is a cross section location map. Figures A-2 through A-5 present the groundwater elevations along each cross section from the first and second quarter 2016 monitoring events. The wells along each transect have been identified as a shallow well, intermediate well, or deep well based on the following classifications:

- A shallow well has the elevation of the bottom of the screen above 90 feet, North American Vertical Datum of 1988 (NAVD88).
- An intermediate well has the elevation of the bottom of the screen between 70 and 90 feet, NAVD88.
- A deep well has the elevation of the bottom of the screen below 70 feet, NAVD88.

Well clusters of different screened intervals were used to evaluate vertical gradients. The vertical gradients for each well pair are presented in Table 2 and Figure 5, where a negative gradient indicates an upward trend and a positive gradient indicates a downward trend. In Appendix A, Figures A-2 through A-5 display the vertical gradients for select well pairs. Figures A-4 and A-5 show that water levels in the shallow zone, where the extraction and infiltration occurred, were generally higher in the area of infiltration and lower in the area of extraction as would be expected. The MW-25 and MW-32 well pair (Figure 5) shows a downward gradient that is consistent with past trends and is to be expected near the infiltration trench, where shallow water levels are elevated because of the infiltrating groundwater. In between the infiltration trench and extraction wells, at well pair MW-3/MW-33, there is minimal vertical gradient. Additionally, there is minimal vertical gradient between the deep zone and shallow zone near the extraction wells (MW-29/MW-38 well pair). Downgradient of the recirculation system, there is little vertical gradient between the shallow, intermediate, and deep zones except for between MW-37/MW-41 where it appears that field measurements at MW-37 were erroneous. Close attention will be paid to measurements at MW-37 during the upcoming round of sampling to obtain a valid measurement that appears to fluctuate in the water level differently from the surrounding wells.

Hydrographs for each monitoring well are presented in Appendix A (Figures A-6 through A-25) along with precipitation data. Daily precipitation data, consisting of rain and snowmelt, are from the National Climatic Data Center's station in Arlington, Washington. Trends between the groundwater elevation and precipitation are shown in the hydrographs, with groundwater levels rising after periods of higher precipitation and groundwater levels decreasing after periods of low or no precipitation. Groundwater elevations generally increased from the fourth quarter of 2015 into the beginning of 2016, with a few exceptions, with increasing intensity and frequency of rainfall events occurring at the end of 2015. The exceptions are wells MW-1 and MW-4. The groundwater elevations then generally decreased into the second quarter of 2016 because of a decrease in intensity and frequency of rainfall events, with the exception at wells MW-1, MW-30, and the suspect measurement from MW-37.

## 4.2 Groundwater Monitoring and Water Quality

The first half of 2016 groundwater sampling occurred on February 28 and 29, 2016, and June 5 and 6, 2016, during the first and second quarter monitoring events, respectively. In the

monitoring well network, 31 monitoring wells were sampled during each monitoring event and a composite sample of the operational extraction wells, with the exception of EW-5 because of accessibility issues, was collected. The following monitoring wells were sampled for PCP by EPA Method 8151A:

- HCMW-7
- MW-22 through MW-29
- MW-31 through MW-34
- MW-38 through MW-43
- Composite sample of EW-1, EW-2, and EW-4 (sampled for PCP and its breakdown products)

The following wells were analyzed for PCP by EPA Method 8151A and polycyclic aromatic hydrocarbons (PAH) by EPA Method 8270D SIM:

- BXS-1 and BXS-2
- MW-2 and MW-3
- MW-15 through MW-18
- MW-30
- MW-35 through MW-37

Wells were sampled using dedicated submersible bladder pumps in "Site Investigation" wells installed before 2004, and a portable submersible pump in "PMP" wells installed in 2007 or later that was decontaminated after sampling each well. Groundwater samples were collected by Baxter personnel in general accordance with the *Revised Supplemental Dissolved-phase Groundwater Monitoring Plan* (Baxter, 2005) and *Site Investigation Work Plan* (Baxter, 2002). Samples were analyzed by ALS Environmental (ALS) in Kelso, Washington.

Laboratory reports are presented in Appendix B. Monitoring well analytical results are summarized in Table 3A. Extraction well analytical results are summarized in Tables 3B and 3C, with historical analytical data in Tables 3D for comparison. Table 4 presents the bacteriological analysis from select wells in 2010.

PCP results for the first and second quarters of 2016 are presented in Figure 6. Historical quarterly PCP isopleth maps for the shallow and intermediate zones have been combined since 2008 and are shown in Figures 7 through 14, with each figure consisting of 1 calendar year of PCP isopleth maps. The first and second quarters of 2016 PCP isopleth maps for the shallow and intermediate zones combined are presented in Figures 15 and 16, respectively. Historical quarterly PCP isopleth maps in the deep zone since the fourth quarter of 2011 are shown in Figures 17 through 20. The first and second quarters of 2016 PCP isopleth maps for the deep zone are presented in Figures 21 and 22, respectively. Figure 23 displays the PCP concentrations from the second quarter of 2016 along a cross section longitudinal to the PCP plume. Time series plots of PCP and PAH concentrations by well are presented in Appendix C. PAH concentrations for the first and second quarters of 2016 are presented in Figure 24.

Generally, PCP concentrations in the first half of 2016 are consistent with previous monitoring events, with a significant number of PCP concentrations decreasing from previous monitoring events (see Appendix C). The exceptions (presented in Appendix C) are:

- **MW-22 (Figure C-5):** For the past 4 quarters, the PCP concentration has shifted from 380 micrograms per liter ( $\mu\text{g}/\text{L}$ ) (third quarter of 2015) to 37  $\mu\text{g}/\text{L}$  (fourth quarter of 2015) to 130  $\mu\text{g}/\text{L}$  (first quarter of 2016) to 81  $\mu\text{g}/\text{L}$  (second quarter of 2016). This well is located upgradient of extraction well EW-1, which was minimally operated before rehabilitation in July 2015 and has been continuously operated since August 2015. The fluctuations in PCP concentration in MW-22 can be attributed to these operational changes in extraction well EW-1.
- **MW-25 (Figure C-7):** The PCP concentration had an upward trend in the first half of 2016, starting from 55  $\mu\text{g}/\text{L}$  in the fourth quarter of 2015 to 380  $\mu\text{g}/\text{L}$  and 800  $\mu\text{g}/\text{L}$  in the first and second quarters of 2016, respectively. This well is located upgradient of the infiltration trench in the source area where fluctuations in concentrations are expected especially in areas that contain residual product.
- **MW-36 (Figure C-12):** The PCP concentration had a downward trend in 2015, with a concentration of 31  $\mu\text{g}/\text{L}$  in the fourth quarter, but increased to 140  $\mu\text{g}/\text{L}$  in the first quarter of 2016. The PCP concentration in the second quarter of 2016 was 14  $\mu\text{g}/\text{L}$ , which continues the downward trend established in 2015.
- **MW-39 (Figure C-14):** The PCP concentration had a downward trend in 2015 ending with a concentration of 24  $\mu\text{g}/\text{L}$  in the fourth quarter, but increased to 110  $\mu\text{g}/\text{L}$  in the first quarter of 2016. The PCP concentration in the second quarter of 2016 was 19  $\mu\text{g}/\text{L}$ , which continues the downward trend established in 2015.
- **MW-42 (Figure C-15):** The PCP concentration in the first quarter of 2016 increased to 42  $\mu\text{g}/\text{L}$  from 7.2  $\mu\text{g}/\text{L}$  in the fourth quarter of 2015. During the second quarter of 2016, the PCP concentration decreased to 31  $\mu\text{g}/\text{L}$ . This well is located downgradient of the Site. It is expected that concentrations will continue to decrease, as displayed in the second quarter of 2016, as the effects of the recirculation system cut off the plume from the source area. Given the groundwater velocity of 0.2 to 5 feet/day and minimal potential for attenuation when the system was not operating, the decrease in concentration could take up to a year.

Multiple wells continued a decreasing trend in PCP concentration for the last several monitoring events. This includes monitoring wells upgradient of the extraction wells (e.g., MW-3, MW-23, and MW-33) and monitoring wells downgradient of the recirculation system (e.g., BSX-1, MW-29, MW-34, MW-36, MW-37, MW-40, and MW-41). The number of wells that show a downward trend of PCP has greatly increased, which is likely caused by the restored operation of the recirculation system. These wells will continue to be observed to determine the effect of the rehabilitation of the recirculation system. Wells further downgradient of the recirculation system (e.g., MW-40 and MW-41) have started to benefit from the recirculation system. Well MW-42, the farthest downgradient of the recirculation system, is anticipated to follow suit within approximately the next half year.

Other wells (e.g., MW-22, MW-24, MW-36, and MW-39) had fluctuating PCP concentrations, sometimes ranging a couple hundred micrograms per liter over several monitoring events. These fluctuating PCP concentrations could be associated with seasonal changes in

groundwater elevation, but also may be associated with changes in gradients because of rehabilitation of the recirculation system.

The extraction well samples were a laboratory composite of discrete groundwater samples from EW-1, EW-2 and EW-4 in the first and second quarter of 2016 that was analyzed for PCP and select breakdown products. The PCP concentration for the first quarter of 2016 was 620 µg/L and 550 µg/L in the second quarter of 2016. The breakdown products 2,4,5-trichlorophenol and 2,4,6-trichlorophenol were not detected above their respective reporting limits in the first and second quarters of 2016, and the total tetrachlorophenols were 34 and 30 µg/L, respectively.

### 4.3 Extraction Wells

Extraction wells EW-01, EW-02, EW-04, and EW-05 were operating continuously during the first and second quarters of 2016 at a cumulative rate of approximately 42 to 50 gpm.

### 4.4 iSOC Wells

iSOCs were installed in three downgradient deep wells (MW-39, MW-40, and MW-41) to add oxygen to the deeper water-bearing zone in June 2015 during the recirculation trench rehabilitation. The oxygen from the iSOCs is regularly depleted with at least a portion of that being used for degradation of PCP. The oxygen tanks were replaced in MW-39, MW-40, and MW-41 on January 27, March 29, and May 27, 2016.

Since the iSOC installation in June 2015, PCP concentrations generally have decreased in MW-39, MW-40, and MW-41. It is unclear how much of the decrease in concentrations is attributable to the iSOCs versus the recirculation system; both appear to be having a positive effect on reducing PCP in the groundwater system.

### 4.5 LNAPL Recovery

The following five wells have sorbent socks to passively absorb LNAPL:

- MW-12
- MW-13
- MW-19
- MW-20
- MW-21

All of the sorbent socks in the recovery wells were inspected on February 29 and June 6, 2016. Based on visual assessment, only the sorbent sock in MW-12 needed to be replaced. Baxter arranges for the used sorbent socks to be disposed of offsite along with the waste produced by the Stella-Jones facility. Since the start of the pilot study, it has been observed that the sorbent socks in recovery wells MW-13, MW-19, MW-20, and MW-21 consistently have less product sorbed compared to the sorbent sock in MW-12.

Based on manufacturer's literature, each sorbent sock is able to absorb 2 pounds of LNAPL. It is calculated that a total of 4.9 pounds of LNAPL were recovered in the first and second quarters of 2016 (Table 5). This calculation is based on the laboratory-determined mass of

the unused portion of the sorbent sock from MW-12 subtracted from the mass of the saturated portion of the sock.

## 4.6 Quality Assurance and Quality Control

Laboratory data validation memorandums were compiled by GSI for the samples collected for the first and second quarter 2016 monitoring events (Appendix D). The memorandum is in agreement with the *Sampling and Analysis Data Management Plan from the Site Investigation Work Plan* (Baxter, 2002). The laboratory data validation memorandums in Appendix D discuss the following samples:

- In the first quarter of 2016, 41 groundwater samples from the monitoring well network (including two duplicate samples), the extraction well laboratory composite sample, and one field blank sample were analyzed by ALS.
- In the second quarter of 2016, 35 groundwater samples from the monitoring well network (including two duplicate samples), the extraction well laboratory composite sample, and one field blank sample were analyzed by ALS.

During the data validation process, GSI determined that the data were fully usable with the addition of the qualifiers specified in Appendix D, Sections 5.1 and 5.2 of the first and second quarter Laboratory Data Validation Memorandums. No data were rejected during validation.

## 4.7 Activities Planned for the Second Half of 2016

Quarterly groundwater monitoring events will continue in the second half of 2016 as outlined in the PMP. These monitoring events will include the same elements discussed in this O&M report: groundwater level measurements, groundwater sampling within the monitoring network and an extraction well composite sample, and inspection of the sorbent socks in the recovery wells.

# 5. References

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- EPA. 2015a. E-mail message from Jan Palumbo, U.S. Environmental Protection Agency, to Heidi Blischke, Rene Fuentes, and Georgia Baxter re: "Request to delay the June Monitoring Event at Arlington, WA Baxter Facility." May 14, 2015.
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## **Tables**

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**Table 1. Groundwater Elevation Summary**

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Well ID	Northing	Easting	Top of Casing Elevation (ft, NAVD88)	Groundwater Elevations (ft, NAVD88)				
				2/23/2015	9/14/2015	12/7/2015	2/29/2016	6/6/2016
BXS-1	427577	1320372.8	142.65	110.93	106.05	106.45	113.75	112.15
BXS-2	427429.1	1320176.6	142.89	113.13	108.19	108.19	115.69	114.39
BXS-3	427202.9	1320143.8	142.07	117.03	108.67	113.54	119.57	117.77
BXS-4	426556.4	1320865.9	143.42	130.42	127.02	129.76	133.27	130.22
MW-1	427352.2	1320826.9	147.44	124.14	119.29	124.44	119.73	122.87
MW-2	428166.9	1320647.4	145.96	109.36	103.96	104.16	112.36	110.36
MW-3	427560.7	1320596.2	146.13	111.93	106.6	107.23	114.63	112.73
MW-4	425935.6	1321013.3	145.02	134.41	131.77	135.01	135.17	132.87
HCMW-7	428230.4	1320337.6	144.73	107.78	103.03	103.64	110.73	109.18
MW-10 <sup>1</sup>	427175.1	1320566	144.99	118.98	111.99	--	--	119.64
MW-14	425602.6	1320388.9	141.70	124.5	116.28	120.03	126.06	121.87
MW-15	427860	1320310.6	142.22	110.02	104.72	105.37	112.72	111.12
MW-16	428006.8	1320325.6	142.91	109.11	104.35	104.71	111.91	110.71
MW-17	427863.6	1320173.9	144.85	109.65	104.95	105.05	112.2	111.05
MW-18	428312.7	1320075.7	142.45	107.15	102.75	102.98	109.8	108.85
MW-22	427395.3	1320573.5	142.75	114.1	109.6	110.53	117.58	115.38
MW-23	427500	1320578.2	143.18	112.64	108.18	109	115.7	113.96
MW-24	427563.9	1320645.1	144.13	111.95	106.58	107.44	114.8	112.71
MW-25	427492.9	1320682	144.98	115.14	112.51	113.72	118.81	116.54
MW-26	427601	1320773	144.75	112.38	106.85	107.98	115.35	112.94
MW-27	427677.9	1320702.8	144.31	111.99	106.55	107.45	114.96	112.72
MW-28	427502.3	1320488.8	142.77	112.17	107.26	108.02	115.05	113.31
MW-29	427637.7	1320503	142.61	111.34	106.1	106.66	113.97	112.21
MW-30	427836.7	1320483.2	142.4	110.49	105.66	105.98	109.55	111.51
MW-31	427715.8	1320294	140.95	110.4	105.4	105.74	112.83	111.60
MW-32	427493.5	1320670.2	145.01	112.24	106.91	107.9	115.15	113.10
MW-33	427577.4	1320602	143.46	111.78	106.51	107.25	114.65	112.62
MW-34	427647.7	1320498.6	142.6	111.29	105.96	106.6	113.9	112.09
MW-35	427726.8	1320608.7	143.89	111.44	106.19	106.89	114.39	112.49
MW-36	427676.1	1320399.4	141.15	111.15	105.77	106.25	113.5	111.95
MW-37 <sup>2</sup>	427969.4	1320251.9	141.96	109.36	104.62	104.86	106.96	120.76
MW-38	427653.6	1320491.4	143.28	111.28	106.08	106.55	113.86	112.06
MW-39 <sup>3</sup>	427993.1	1320148.9	142.40	108.7	103.97	104.18	111.13	109.89
MW-40	427859.5	1320316.6	142.1	109.4	105.24	104.43	112.77	111.25
MW-41 <sup>3</sup>	427968.1	1320255	141.47	108.95	103.45	104.93	110.72	109.51
MW-42	428319.7	1320080.9	142.68	107.04	102.58	102.78	109.57	108.56
MW-43	428757.5	1319841.1	141.51	103.86	99.96	99.96	106.26	105.77

**Notes**

NM = not measured, groundwater below level of dedicated pump.

NA = not applicable; MW-38 through MW-42 were installed in July 2010 and MW-43 was installed in October 2010.

1 Depth to water at MW-10 not measured in Fourth Quarter 2015 and First Quarter 2016.

2 Suspect measurement at MW-37 in Second Quarter 2016.

3 Casing stick up altered on August 1, 2015 during the installation of iSocs in wells. MW-39 had 0.45' removed and MW-40 had 0.74' removed from the top of the casing.

**Table 2. Vertical Groundwater Gradients at Monitoring Well Pairs**  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington

Vertical Groundwater Gradient <sup>1,2</sup>	Well Pair	2/23/2015	9/14/2015	12/7/2015	2/29/2016	6/6/2016
Shallow to Intermediate Zone	MW-25/MW-32	0.1975	0.3815	0.3965	0.2493	0.2343
	MW-3/MW-33	0.0095	0.0057	-0.0013	-0.0013	0.0070
	MW-29/MW-34	0.0028	0.0079	0.0034	0.0040	0.0068
Shallow to Deep Zone	MW-29/MW-38	0.0016	0.0005	0.0030	0.0030	0.0041
	MW-15/MW-40	0.0165	-0.0139	0.0251	-0.0013	-0.0035
Intermediate to Deep Zone	MW-37/MW-41	0.0169	0.0482	-0.0029	-0.1548	0.4632 <sup>3</sup>

**Notes**

- 1 Vertical groundwater gradients are dimensionless.
- 2 Gradients are calculated by shallower aquifer groundwater elevation minus deeper aquifer groundwater elevation divided by the distance between well screen midpoints. Positive values indicate a downward flow direction, while negative values indicate an upward flow direction.
- 3 Suspect measurement at MW-37 in Second Quarter 2016.

Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benz(a)pyrene	Benz(b)fluoranthene	Benz(g,h,i)perylene	Benz(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2008_01LF	BXS-1	BXS-1	1/9/2008	66	0.019 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.0067 J	0.005 U	0.0035 U	0.0067
2008_03	BXS-1	BXS-1	2/26/2008	54																		
2008_SI	BXS-1	BXS-1	4/30/2008	53	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.019 U	0.005 U	0.0035 U	ND
2008_SI	BXS-1	BXS-1	7/29/2008	27	0.019 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.019 U	0.005 U	0.0035 U	ND
2008_SI	BXS-1	BXS-1	10/22/2008	26	0.02	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	0.02
2009_SI	BXS-1	BXS-1	2/10/2009	38 J	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.019 U	0.005 U	0.0035 U	ND
2009_SI	BXS-1	BXS-1	5/6/2009	81	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	ND
2009_SI	BXS-1	BXS-1	8/5/2009	46	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.019 U	0.005 U	0.0035 U	ND
2009_SI	BXS-1	BXS-1	11/18/2009	94	0.019 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.089 U	0.005 U	0.0035 U	ND
2010_02SIPMP	BXS-1	BXS-1	2/10/2010	77	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.003 J	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.057	0.005 U	0.0035 U	0.06
2010_05SIPMP	BXS-1	BXS-1	5/26/2010	92	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.02 U	0.0043 U	0.0023 U	0.0025 U	0.0034 U	0.0025 U	0.0045 J	0.0038 U	0.0026 U	0.039 U	0.009 J	0.0037 J	0.0172	
2010_08SIPMP	BXS-1	BXS-1	8/18/2010	85	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.072	0.005 U	0.0035 U	0.072	
2010_11SIPMP	BXS-1	BXS-1	11/18/2010	73	0.0057 J	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.025 U	0.005 U	0.0035 U	0.0057	
2011_02SIPMP	BXS-1	BXS-1	2/9/2011	78 J	0.02 U	0.0044 U	0.0034 U	0.0036 U	0.0055 J	0.0072 J	0.01 J	0.015 J	0.008 J	0.0041 J	0.0073 J	0.0044 U	0.0038 U	0.0097 J	0.021 U	0.005 U	0.0035 U	0.0668
2011_05SIPMP	BXS-1	BXS-1	5/17/2011	54	0.02 U	0.0044 U	0.0034 U	0.0076 J	0.02 U	0.0077 J	0.02 U	0.02 U	0.0081 J	0.0062 J	0.0044 U	0.0038 U	0.02 U	0.02 U	0.0063 J	0.0035 U	0.0359	
2011_08SIPMP	BXS-1	BXS-1	8/24/2011	84	0.0028 J	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.011 J	0.005 U	0.0035 U	0.0138	
2011_11SIPMP	BXS-1	BXS-1	11/3/2011	79	0.02 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.066	0.005 U	0.0035 U	0.066	
2012_02SIPMP	BXS-1	BXS-1	2/14/2012	78	0.0073 J	0.0057 J	0.02 U	0.0073 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0054 J	0.0056 J	0.02 U	0.031	0.01 J	0.02 U	0.0723	
2012_05SIPMP	BXS-1	BXS-1	5/2/2012	68	0.0076 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.026	0.019 U	0.019 U	0.0336
2012_08SIPMP	BXS-1	BXS-1	8/21/2012	70	0.019 U	0.019 U	0.019 U	0.0046 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.01 J	0.019 U	0.019 U	0.0146
2012_11SIPMP	BXS-1	BXS-1	11/13/2012	42 J	0.026 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.024 U	0.011 U	0.019 U	0.0063	
2012_11SIPMP	BXS-5	BXS-5	11/13/2012	75 J	0.024 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.013 U	0.01 U	0.019 U	0.0051	
2013_02SIPMP	BXS-1	BXS-1	2/12/2013	56 J	0.0052 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.011 J	0.019 U	0.019 U	0.0276	
2013_02SIPMP	BXS-1	BXS-5	2/12/2013	60 J	0.0046 J	0.019 U	0.019 U	0.0066 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0071 J	0.019 U	0.019 U	0.0227	
2013_06SIPMP	BXS-1	BXS-1	6/4/2013	69	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0096 J	0.019 U	0.019 U	0.0096
2013_06SIPMP	BXS-1	BXS-5	6/4/2013	67	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.028
2013_08SIPMP	BXS-1	BXS-1	8/27/2013	51	0.0049 U	0.0044 U	0.0034 U															

Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(e,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2010_11SIPMP	BXS-2	BXS-2	11/18/2010	0.07 U	0.0025 J	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.026 U	0.005 U	0.0035 U	0.0025	
2011_02SIPMP	BXS-2	BXS-2	2/9/2011	0.07 U	0.02 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	ND	
2011_05SIPMP	BXS-2	BXS-2	5/17/2011	0.07 U	0.02 U	0.0044 U	0.0034 U	0.0057 J	0.02 U	0.0043 U	0.02 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	0.0057	
2011_08SIPMP	BXS-2	BXS-2	8/24/2011	0.07 U	0.0038 J	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0054 J	0.0026 U	0.011 J	0.005 U	0.0035 U	0.0202	
2011_11SIPMP	BXS-2	BXS-2	11/3/2011	0.07 U	0.02 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.005 J	0.0026 U	0.037	0.005 U	0.0035 U	0.042	
2012_02SIPMP	BXS-2	BXS-2	2/14/2012	87 U	0.006 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.006 J	0.02 U	0.037	0.02 U	0.02 U	0.049
2012_05SIPMP	BXS-2	BXS-2	5/2/2012	0.5 U	0.0086 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.13	0.019 U	0.019 U	0.1386	
2012_08SIPMP	BXS-2	BXS-2	8/21/2012	0.5 U	0.0039 J	0.021 U	0.021 U	0.0066 J	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.0066 J	0.021 U	0.075	0.021 U	0.021 U	0.0921	
2012_11SIPMP	BXS-2	BXS-2	11/13/2012	0.5 U	0.022 U	0.019 U	0.019 U	0.0041 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0088 J	0.019 U	0.035 U	0.013 U	0.019 U	0.0129	
2013_02SIPMP	BXS-2	BXS-2	2/12/2013	0.5 U	0.0065 J	0.019 U	0.019 U	0.0067 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0055 J	0.019 U	0.014 J	0.019 U	0.01 J	0.0427	
2013_06SIPMP	BXS-2	BXS-2	6/4/2013	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.029	0.019 U	0.019 U	0.019 U	0.019 U	0.029	
2013_08SIPMP	BXS-2	BXS-2	8/27/2013	0.16 U	0.0073 U	0.0067 U	0.01 J	0.0036 U	0.0026 U	0.0043 U	0.0041 U	0.0029 U	0.003 U	0.0034 U	0.0025 U	0.01 U	0.0049 U	0.0026 U	0.15	0.005 U	0.0079 J	0.1679	
2013_12SIPMP	BXS-2	BXS-2	12/7/2013	0.5 U	0.0042 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.057 U	0.019 U	0.019 U	ND
2014_03SIPMP	BXS-2	BXS-2	3/17/2014	0.5 U	0.0094 U	0.01 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.025 U	0.02 U	0.025 U	0.02 U	0.02 U	0.01
2014_06SIPMP	BXS-2	BXS-2	6/2/2014	0.5 U	0.02 U	0.02 U	0.0093 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.044 U	0.02 U	0.02 U	0.0093	
2014_09SIPMP	BXS-2	BXS-2	9/29/2014	0.5 U	0.02 U	0.02 U	0.02 U	0.011 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.031	
2014_11SIPMP	BXS-2	BXS-2	11/17/2014	0.5 U	0.019 U	0.0059 NJ	0.019 U	0.0074 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.045 U	0.019 U	0.019 U	0.0133 J		
2015_02SIPMP	BXS-2	BXS-2	2/23/2015	0.5 U	0.0029 J	0.009 NJ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.02 U	0.02 U	0.02 U	0.0119 J	
2015_09SIPMP	BXS-2	BXS-2	9/14/2015	0.5 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.022 U	0.02 U	0.02 U	0.02 U	ND	
2015_12SIPMP	BXS-2	BXS-2	12/7/2015	0.5 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.02 U	0.02 U	ND	
2016_02SIPMP	BXS-2	BXS-2	2/29/2016	0.5 U	0.02 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	ND	
2016_06SIPMP	BXS-2	BXS-2	6/6/2016	1.3 U	0.0072 J	0.019 U	0.019 U	0.048 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.033 U	0.076 U	0.019 U	0.0072 J		
2012_05SIPMP	BXS-3	BXS-3	5/2/2012	0.5 U	0.003 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.044	0.019 U	0.019 U	0.0469		
2012_08SIPMP	BXS-4	BXS-4	5/2/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.034	0.019 U	0.019 U	0.034		
2008_01	EW1-EW7	0130-COMP	1/30/2008	130																			
2008_03	EW1-EW7	EW1-7 COMP	2/27/2008	270																			
2008_SI	EW1-EW7	EW 1-7 Comp.	4/29/2008	240																			
2008_SI	EW1-EW7	Extra Well 1-7	7/29/2008	23																			

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benz[a]pyrene	Benz[b]fluoranthene	Benz[g,h,i]perylene	Benz[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2015_09SIPMP	HCMW-7	HCMW-7	9/14/2015	0.5 U																		
2015_12SIPMP	HCMW-7	HCMW-7	12/7/2015	0.5 U																		
2016_02SIPMP	HCMW-7	HCMW-7	2/29/2016	0.5 U																		
2016_06SIPMP	HCMW-7	HCMW-7	6/6/2016	1.3 U																		
2015_09SIPMP	MW-1	MW-1	9/14/2015	0.50 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0042 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.022 U	0.019 U	0.019 U	0.0042 J	
2008_SI	MW-10	MW-10	4/29/2008	0.08 U																		
2008_SI	MW-10	MW-10	7/29/2008	0.08 U																		
2015_09SIPMP	MW-10	MW-10	9/14/2015	0.50 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.022 U	0.019 U	0.019 U	ND	
2015_09SIPMP	MW-14	MW-14	9/14/2015	0.50 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.022 U	0.019 U	0.019 U	ND	
2008_01	MW-15	MW-15	1/8/2008	200	0.013 J	0.0044 U	0.0081 J	0.0086 J	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.41	0.005 U	0.0035 U	0.4397
2008_SI	MW-15	MW-15	4/29/2008	200	0.019 U	0.0044 U	0.0087 J	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.52	0.005 U	0.0035 U	0.5287
2008_SI	MW-15	MW-15	7/29/2008	190	0.019 U	0.0044 U	0.0076 J	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.44	0.005 U	0.0035 U	0.4476
2008_SI	MW-15	MW-15	10/21/2008	230	0.019 U	0.0044 U	0.01 J	0.01 J	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.5	0.005 U	0.0035 U	0.52
2009_SI	MW-15	MW-15	2/10/2009	190	0.019 U	0.0055 J	0.0084 J	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.49	0.005 U	0.0035 U	0.5039
2009_SI	MW-15	MW-15	5/5/2009	98	0.02 U	0.0044 U	0.0055 J	0.0054 J	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.3	0.005 U	0.0035 U	0.3109
2009_SI	MW-15	MW-15	8/4/2009	95	0.0023 U	0.0044 U	0.0039 J	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.19 U	0.005 U	0.0035 U	0.0039
2009_SI	MW-15	MW-15	11/17/2009	64	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	ND
2010_02SIPMP	MW-15	MW-15	2/8/2010	33	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.45	0.005 U	0.0035 U	0.045
2010_05SIPMP	MW-15	MW-15	5/24/2010	0.07 U	0.0023 U	0.0044 U	0.0036 U	0.019 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.045 J	0.005 U	0.0036 J	0.0081	
2010_08SIPMP	MW-15	MW-15	8/17/2010	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.043 J	0.005 U	0.0035 U	0.0043
2010_11SIPMP	MW-15	MW-15	11/16/2010	0.097 J	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.35 U	0.005 U	0.0035 U	ND
2011_02SIPMP	MW-15	MW-15	2/8/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	ND
2011_05SIPMP	MW-15	MW-15	5/16/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.037 U	0.005 U	0.0035 U	ND
2011_08SIPMP	MW-15	MW-15	8/23/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	ND
2011_11SIPMP	MW-15	MW-15	11/2/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	ND
2012_02SIPMP	MW-15	MW-15	2/13/2012	0.2 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.043	
2012_05SIPMP	MW-15	MW-15	4/30/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.004 J	0.019 U	0.019 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.045	
2012_08SIPMP	MW-15	MW-15	8/19/2012	0.49 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.091	
2012_11SIPMP	MW-15	MW-15	11/11/2012	0.5 U																		

Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benz(a)pyrene	Benz(b)fluoranthene	Benz(g,h,i)perylene	Benz(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2012_OSSIPMP	MW-16	MW-16	4/30/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	0.014	
2012_08SIPMP	MW-16	MW-16	8/19/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	0.004	
2012_11SIPMP	MW-16	MW-16	11/12/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	ND	
2013_02SIPMP	MW-16	MW-16	2/10/2013	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	0.0097	
2013_06SIPMP	MW-16	MW-16	6/2/2013	0.5 U	0.0031 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.02 U	0.043	
2013_08SIPMP	MW-16	MW-16	8/26/2013	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0041 U	0.0029 U	0.003 U	0.0034 U	0.0025 U	0.01 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0053 U	0.13
2013_12SIPMP	MW-16	MW-16	12/2/2013	0.5 U	0.0031 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.0067 U	0.019 U	ND	
2014_03SIPMP	MW-16	MW-16	3/17/2014	0.17 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	ND	
2014_06SIPMP	MW-16	MW-16	6/1/2014	0.5 U	0.02 U	0.02 U	0.02 U	0.02 U	0.029 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.02 U	0.0229	
2014_09SIPMP	MW-16	MW-16	9/28/2014	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.028 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	0.0198	
2014_11SIPMP	MW-16	MW-16	11/17/2014	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	ND	
2015_02SIPMP	MW-16	MW-16	2/23/2015	0.46 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	ND	
2015_09SIPMP	MW-16	MW-16	9/14/2015	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	ND	
2015_12SIPMP	MW-16	MW-16	12/6/2015	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03 U	0.019 U	0.019 U	ND	
2016_02SIPMP	MW-16	MW-16	2/29/2016	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.029 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0029 J	
2016_06SIPMP	MW-16	MW-16	6/5/2016	1.3 U	0.019 U	0.019 U	0.019 U	0.019 U	0.048 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.049 U	0.076 U	0.019 U	ND	
2008_01	MW-17	MW-17	1/8/2008	0.08 U	0.0043 J	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	0.0079
2008_SI	MW-17	MW-17	4/29/2008	0.08 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND
2008_SI	MW-17	MW-17	7/28/2008	0.08 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND
2008_SI	MW-17	MW-17	10/21/2008	0.08 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND
2009_SI	MW-17	MW-17	2/9/2009	0.16 U	0.019 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND
2009_SI	MW-17	MW-17	5/5/2009	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND
2009_SI	MW-17	MW-17	8/3/2009	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND
2009_SI	MW-17	MW-17	11/17/2009	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND
2010_02SIPMP	MW-17	MW-17	2/8/2010	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	0.05
2010_OSSIPMP	MW-17	MW-17	5/24/2010	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.019 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.0059 U	0.0039 J	0.0399
2010_08SIPMP</td																						

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benz[a]pyrene	Benz[b]fluoranthene	Benz[e,h,i]perylene	Benz[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)		
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		
2010_08SIPMP	MW-18	MW-18	8/16/2010	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND	
2010_11SIPMP	MW-18	MW-18	11/15/2010	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND	
2011_02SIPMP	MW-18	MW-18	2/7/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND	
2011_05SIPMP	MW-18	MW-18	5/16/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND	
2011_08SIPMP	MW-18	MW-18	8/23/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND	
2011_11SIPMP	MW-18	MW-18	11/2/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.03 U	0.005 U	0.0035 U	ND	
2012_02SIPMP	MW-18	MW-18	2/13/2012	0.2 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.044	
2012_05SIPMP	MW-18	MW-18	5/1/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.13	
2012_08SIPMP	MW-18	MW-18	8/20/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.036	
2012_11SIPMP	MW-18	MW-18	11/12/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND	
2013_02SIPMP	MW-18	MW-18	2/11/2013	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.021	
2013_06SIPMP	MW-18	MW-18	6/3/2013	0.5 U	0.0045 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	ND
2013_08SIPMP	MW-18	MW-18	8/26/2013	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0019 U	0.0034 U	0.0025 U	0.0034 U	0.0026 U	0.0038 U	0.0026 U	0.0053 U	0.0053 U	0.1	
2013_12SIPMP	MW-18	MW-18	12/2/2013	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND
2014_03SIPMP	MW-18	MW-18	3/17/2014	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND
2014_06SIPMP	MW-18	MW-18	6/2/2014	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND
2014_09SIPMP	MW-18	MW-18	9/28/2014	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.015
2014_11SIPMP	MW-18	MW-18	11/17/2014	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND
2015_02SIPMP	MW-18	MW-18	2/23/2015	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND
2015_09SIPMP	MW-18	MW-18	9/14/2015	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND
2015_12SIPMP	MW-18	MW-18	12/7/2015	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND
2016_02SIPMP	MW-18	MW-18	2/29/2016	0.5 U	0.031	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0407 J
2016_06SIPMP	MW-18	MW-18	6/6/2016	1.3 U	0.019 U	0.019 U	0.019 U	0.048 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.049 U	0.076 U	0.019 U	ND
2008_01	MW-2	MW-2	1/8/2008	0.08 U	0.0091 J	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.006 J	0.005 U	0.0035 U	0.0151	
2008_SI	MW-2	MW-2	4/29/2008	0.08 U	0.02 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U</td			

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno[1,2,3- <i>cd</i> ]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )									
2008_SI	MW-22	MW-22	7/29/2008	32																			
2008_SI	MW-22	MW-22	10/21/2008	15																			
2009_SI	MW-22	MW-22	2/11/2009	5.5																			
2009_SI	MW-22	MW-22	5/5/2009	3.6																			
2009_SI	MW-22	MW-22	8/4/2009	4.4																			
2009_SI	MW-22	MW-22	11/17/2009	5.4																			
2010_02SIPMP	MW-22	MW-22	2/9/2010	3.9																			
2010_05SIPMP	MW-22	MW-22	5/25/2010	13																			
2010_08SIPMP	MW-22	MW-22	8/18/2010	51 J																			
2010_11SIPMP	MW-22	MW-22	11/17/2010	98																			
2011_02SIPMP	MW-22	MW-22	2/9/2011	130																			
2011_05SIPMP	MW-22	MW-22	5/17/2011	150																			
2011_08SIPMP	MW-22	MW-22	8/23/2011	220																			
2011_11SIPMP	MW-22	MW-22	11/2/2011	230																			
2012_02SIPMP	MW-22	MW-22	2/13/2012	300																			
2012_05SIPMP	MW-22	MW-22	4/30/2012	280																			
2012_08SIPMP	MW-22	MW-22	8/20/2012	280																			
2012_11SIPMP	MW-22	MW-22	11/12/2012	250																			
2013_02SIPMP	MW-22	MW-22	2/11/2013	180 J																			
2013_06SIPMP	MW-22	MW-22	6/3/2013	160																			
2013_08SIPMP	MW-22	MW-22	8/25/2013	130																			
2013_12SIPMP	MW-22	MW-22	12/2/2013	130																			
2014_05SIPMP	MW-22	MW-22	3/17/2014	94																			
2014_06SIPMP	MW-22	MW-22	6/1/2014	73																			
2014_09SIPMP	MW-22	MW-22	9/28/2014	140																			
2014_11SIPMP	MW-22	MW-22	11/16/2014	120																			
2015_02SIPMP	MW-22	MW-22	2/23/2015	240																			
2015_09SIPMP	MW-22	MW-22	9/13/2015	380																			
2015_12SIPMP	MW-22	MW-22	12/6/2015	37																			
2016_02SIPMP	MW-22	MW-22	2/28/2016	130																			
2016_06SIPMP	MW-22	MW-22	6/6/2016	81																			
2008_01	MW-23	MW-23	1/10/2008	500																			
2008_03	MW-23	MW-23	2/27/2008	450																			
2008_SI	MW-23	MW-23	4/29/2008	210																			
2008_SI	MW-23	MW-23	7/29/2008	210																			
2008_SI	MW-23	MW-23	10/21/2008	63																			
2009_SI	MW-23	MW-23	2/11/2009	170																			
2009_SI	MW-23	MW-23	5/5/2009	140																			
2009_SI	MW-23	MW-23	8/4/2009	70																			
2009_SI	MW-23	MW-23	11/17/2009	8.6																			
2010_02SIPMP	MW-23	MW-23	2/9/2010	85																			
2010_05SIPMP	MW-23	MW-23	5/25/2010	150																			
2010_08SIPMP	MW-23	MW-23	8/18/2010	210																			
2010_11SIPMP	MW-23	MW-23	11/17/2010	210																			
2011_02SIPMP	MW-23	MW-23	2/8/2011	340																			
2011_05SIPMP	MW-23	MW-23	5/17/2011	380																			
2011_08SIPMP	MW-23	MW-23	8/23/2011</td																				

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2014_09SIPMP	MW-23	MW-23	9/28/2014	230																			
2014_11SIPMP	MW-23	MW-23	11/16/2014	200																			
2015_02SIPMP	MW-23	MW-23	2/23/2015	270																			
2015_09SIPMP	MW-23	MW-23	9/13/2015	110																			
2015_12SIPMP	MW-23	MW-23	12/6/2015	84																			
2016_02SIPMP	MW-23	MW-23	2/28/2016	100																			
2016_06SIPMP	MW-23	MW-23	6/5/2016	110																			
2008_01	MW-24	MW-24	1/10/2008	180																			
2008_03	MW-24	MW-24	2/27/2008	96																			
2008_SI	MW-24	MW-24	4/29/2008	0.08 U																			
2008_SI	MW-24	MW-24	7/29/2008	0.08 U																			
2008_SI	MW-24	MW-24	10/21/2008	2.2																			
2009_SI	MW-24	MW-24	2/11/2009	0.16 U																			
2009_SI	MW-24	MW-24	5/5/2009	0.16 U																			
2009_SI	MW-24	MW-24	8/4/2009	0.35																			
2009_SI	MW-24	MW-24	11/17/2009	0.36 J																			
2010_02SIPMP	MW-24	MW-24	2/9/2010	3.3																			
2010_05SIPMP	MW-24	MW-24	5/25/2010	0.17 J																			
2010_08SIPMP	MW-24	MW-24	8/17/2010	0.14 J																			
2010_11SIPMP	MW-24	MW-24	11/17/2010	0.27 J																			
2011_02SIPMP	MW-24	MW-24	2/9/2011	2.8																			
2011_05SIPMP	MW-24	MW-24	5/17/2011	13																			
2011_08SIPMP	MW-24	MW-24	8/23/2011	70																			
2011_11SIPMP	MW-24	MW-24	11/2/2011	5.6																			
2012_02SIPMP	MW-24	MW-24	2/14/2012	58																			
2012_05SIPMP	MW-24	MW-24	4/30/2012	380																			
2012_08SIPMP	MW-24	MW-24	8/20/2012	170																			
2012_11SIPMP	MW-24	MW-24	11/12/2012	0.5 U																			
2013_02SIPMP	MW-24	MW-24	2/11/2013	230 J																			
2013_02SIPMP	MW-24	MW-44	2/11/2013	280 J																			
2013_06SIPMP	MW-24	MW-24	6/3/2013	540																			
2013_06SIPMP	MW-44	MW-44	6/3/2013	480																			
2013_08SIPMP	MW-24	MW-24	8/25/2013	95																			
2013_08SIPMP	MW-44	MW-44	8/25/2013	87																			
2013_12SIPMP	MW-24	MW-24	12/1/2013	230																			
2014_03SIPMP	MW-24	MW-24	3/16/2014	0.5 U																			
2014_06SIPMP	MW-24	MW-24	6/1/2014	64																			
2014_09SIPMP	MW-24	MW-24	9/28/2014	280																			
2014_11SIPMP	MW-24	MW-24	11/16/2014	68																			
2014_11SIPMP	MW-45	MW-45	11/16/2014	65																			
2015_02SIPMP	MW-24	MW-24	2/23/2015	2.7																			
2015_09SIPMP	MW-24	MW-24	9/13/2015	87																			
2015_12SIPMP	MW-24	MW-24	12/6/2015	60																			
2016_02SIPMP	MW-24	MW-24	2/28/2016	210																			
2016_02SIPMP	MW-44	MW-44	2/28/2016	200																			
2016_06SIPMP	MW-24	MW-24	6/5/2016	96																			
2008_01	MW-25	MW-25	1/10/2008	230																			
2008_03	MW-25	MW-25	2/27/2008	550																			
2008_SI	MW-25	MW-25	4/29/2008	240	</																		

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo[a]pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2011_02SIPMP	MW-25	MW-25	2/9/2011	53																			
2011_05SIPMP	MW-25	MW-25	5/17/2011	3200																			
2011_08SIPMP	MW-25	MW-25	8/23/2011	470																			
2011_11SIPMP	MW-25	MW-25	11/3/2011	310																			
2012_02SIPMP	MW-25	MW-25	2/14/2012	390																			
2012_05SIPMP	MW-25	MW-25	4/30/2012	2800																			
2012_08SIPMP	MW-25	MW-25	8/20/2012	810																			
2012_11SIPMP	MW-25	MW-25	11/12/2012	430																			
2013_02SIPMP	MW-25	MW-25	2/11/2013	1700 J																			
2013_06SIPMP	MW-25	MW-25	6/3/2013	2100																			
2013_08SIPMP	MW-25	MW-25	8/25/2013	670																			
2013_12SIPMP	MW-25	MW-25	12/1/2013	430																			
2014_03SIPMP	MW-25	MW-25	3/16/2014	310																			
2014_06SIPMP	MW-25	MW-25	6/1/2014	280																			
2014_09SIPMP	MW-25	MW-25	9/28/2014	180																			
2014_11SIPMP	MW-25	MW-25	11/16/2014	110																			
2015_02SIPMP	MW-25	MW-25	2/23/2015	330																			
2015_09SIPMP	MW-25	MW-25	9/13/2015	110																			
2015_12SIPMP	MW-25	MW-25	12/6/2015	55																			
2016_02SIPMP	MW-25	MW-25	2/28/2016	380																			
2016_06SIPMP	MW-25	MW-25	6/5/2016	800																			
2008_01	MW-26	MW-26	1/9/2008	0.08 U																			
2008_03	MW-26	MW-26	2/27/2008	0.17 J																			
2008_SI	MW-26	MW-26	4/29/2008	0.08 U																			
2008_SI	MW-26	MW-26	7/29/2008	0.08 U																			
2008_SI	MW-26	MW-26	10/21/2008	0.61 U																			
2009_SI	MW-26	MW-26	2/11/2009	0.16 U																			
2009_SI	MW-26	MW-26	5/5/2009	0.16 U																			
2009_SI	MW-26	MW-26	8/4/2009	0.16 U																			
2009_SI	MW-26	MW-26	11/17/2009	0.16 U																			
2010_02SIPMP	MW-26	MW-26	2/9/2010	0.16 U																			
2010_05SIPMP	MW-26	MW-26	5/25/2010	0.07 U																			
2010_08SIPMP	MW-26	MW-26	8/18/2010	0.089 J																			
2010_11SIPMP	MW-26	MW-26	11/17/2010	0.076 J																			
2011_02SIPMP	MW-26	MW-26	2/9/2011	0.07 U																			
2011_05SIPMP	MW-26	MW-26	5/18/2011	0.07 U																			
2011_08SIPMP	MW-26	MW-26	8/24/2011	0.07 U																			
2011_11SIPMP	MW-26	MW-26	11/2/2011	0.14 J																			
2012_02SIPMP	MW-26	MW-26	2/13/2012	0.16 NJ																			
2012_05SIPMP	MW-26	MW-26	4/30/2012	0.16 J																			
2012_08SIPMP	MW-26	MW-26	8/20/2012	0.5 U																			
2012_11SIPMP	MW-26	MW-26	11/12/2012	0.5 U																			
2013_02SIPMP	MW-26	MW-26	2/11/2013	0.19 J																			
2013_06SIPMP	MW-26	MW-26	6/3/2013	0.5 U																			
2013_08SIPMP	MW-26	MW-26	8/25/2013	0.27 J																			
2013_12SIPMP	MW-26	MW-26	12/1/2013	0.58 N																			
2014_03SIPMP	MW-26	MW-26	3/16/2014	0.5 U																			
2014_06SIPMP	MW-26	MW-26	6/1/2014	0.5 U																			
2014_09SIPMP	MW-26	MW-26																					

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benz[a]pyrene	Benz[b]fluoranthene	Benz[e]perylene	Benz[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )													
2008_SI	MW-27	MW-27	10/21/2008	0.23 U																			
2009_SI	MW-27	MW-27	2/11/2009	0.16 U																			
2009_SI	MW-27	MW-27	5/5/2009	0.16 U																			
2009_SI	MW-27	MW-27	8/4/2009	0.16 U																			
2009_SI	MW-27	MW-27	11/17/2009	0.16 U																			
2010_02SIPMP	MW-27	MW-27	2/9/2010	0.16 U																			
2010_05SIPMP	MW-27	MW-27	5/25/2010	0.07 U																			
2010_08SIPMP	MW-27	MW-27	8/18/2010	0.07 U																			
2010_11SIPMP	MW-27	MW-27	11/17/2010	0.27 J																			
2011_02SIPMP	MW-27	MW-27	2/9/2011	0.07 J																			
2011_05SIPMP	MW-27	MW-27	5/18/2011	0.07 U																			
2011_08SIPMP	MW-27	MW-27	8/24/2011	0.07 U																			
2011_11SIPMP	MW-27	MW-27	11/2/2011	0.07 U																			
2012_02SIPMP	MW-27	MW-27	2/13/2012	0.2 U																			
2012_05SIPMP	MW-27	MW-27	4/30/2012	0.5 U																			
2012_08SIPMP	MW-27	MW-27	8/20/2012	0.5 U																			
2012_11SIPMP	MW-27	MW-27	11/12/2012	0.5 U																			
2013_02SIPMP	MW-27	MW-27	2/11/2013	0.5 U																			
2013_06SIPMP	MW-27	MW-27	6/3/2013	0.5 U																			
2013_08SIPMP	MW-27	MW-27	8/25/2013	0.3 N																			
2013_12SIPMP	MW-27	MW-27	12/1/2013	0.52 N																			
2014_03SIPMP	MW-27	MW-27	3/16/2014	0.31 N																			
2014_06SIPMP	MW-27	MW-27	6/1/2014	0.5 U																			
2014_09SIPMP	MW-27	MW-27	9/28/2014	0.5 U																			
2014_11SIPMP	MW-27	MW-27	11/16/2014	0.5 U																			
2015_02SIPMP	MW-27	MW-27	2/23/2015	0.5 U																			
2015_09SIPMP	MW-27	MW-27	9/13/2015	0.5 U																			
2015_12SIPMP	MW-27	MW-27	12/6/2015	0.5 U																			
2016_02SIPMP	MW-27	MW-27	2/28/2016	0.5 U																			
2016_06SIPMP	MW-27	MW-27	6/5/2016	1.3 U																			
2008_01	MW-28	MW-28	1/9/2008	0.75																			
2008_03	MW-28	MW-28	2/26/2008	0.76																			
2008_SI	MW-28	MW-28	4/29/2008	0.22																			
2008_SI	MW-28	MW-28	7/28/2008	0.08 U																			
2008_SI	MW-28	MW-28	10/21/2008	0.08 U																			
2009_SI	MW-28	MW-28	2/11/2009	0.16 U																			
2009_SI	MW-28	MW-28	5/5/2009	0.16 U																			
2009_SI	MW-28	MW-28	8/4/2009	0.16 U																			
2009_SI	MW-28	MW-28	11/17/2009	0.31 J																			
2010_02SIPMP	MW-28	MW-28	2/9/2010	0.16 U																			
2010_05SIPMP	MW-28	MW-28	5/25/2010	0.33																			
2010_08SIPMP	MW-28	MW-28	8/17/2010	0.48																			
2010_11SIPMP	MW-28	MW-28	11/17/2010	0.87																			
2011_02SIPMP	MW-28	MW-28	2/10/2011	2.6																			
2011_05SIPMP	MW-28	MW-28	5/18/2011	3.6 J																			
2011_08SIPMP	MW-28	MW-28	8/24/2011	10																			
2011_11SIPMP	MW-28	MW-28	11/3/2																				

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benz[a]pyrene	Benz[b]fluoranthene	Benz[g,h,i]perylene	Benz[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )													
2015_02SIPMP	MW-28	MW-28	2/23/2015	0.4 J																			
2015_09SIPMP	MW-28	MW-28	9/13/2015	0.9 U																			
2015_09SIPMP	MW-28	MW-44	9/13/2015	0.5 U																			
2015_12SIPMP	MW-28	MW-28	12/7/2015	0.68 U																			
2016_02SIPMP	MW-28	MW-28	2/29/2016	0.5 U																			
2016_06SIPMP	MW-28	MW-28	6/6/2016	1.3 U																			
2008_01	MW-29	MW-29	1/10/2008	1600																			
2008_03	MW-29	MW-29	2/26/2008	730																			
2008_SI	MW-29	MW-29	4/28/2008	0.08 U																			
2008_SI	MW-29	MW-29	7/28/2008	0.08 U																			
2008_SI	MW-29	MW-29	10/20/2008	7.5																			
2009_SI	MW-29	MW-29	2/11/2009	0.16 U																			
2009_SI	MW-29	MW-29	5/5/2009	0.16 U																			
2009_SI	MW-29	MW-29	8/4/2009	0.16 U																			
2009_SI	MW-29	MW-29	11/17/2009	0.16 U																			
2010_02SIPMP	MW-29	MW-29	2/9/2010	0.16 U																			
2010_05SIPMP	MW-29	MW-29	5/24/2010	0.07 U																			
2010_08SIPMP	MW-29	MW-29	8/17/2010	0.099 J																			
2010_11SIPMP	MW-29	MW-29	11/17/2010	0.087 J																			
2011_02SIPMP	MW-29	MW-29	2/8/2011	0.07 U																			
2011_05SIPMP	MW-29	MW-29	5/17/2011	0.12 J																			
2011_08SIPMP	MW-29	MW-29	8/23/2011	0.11 J																			
2011_11SIPMP	MW-29	MW-29	11/2/2011	0.23 J																			
2012_02SIPMP	MW-29	MW-29	2/13/2012	0.32																			
2012_05SIPMP	MW-29	MW-29	4/30/2012	0.5 U																			
2012_08SIPMP	MW-29	MW-29	8/20/2012	0.22 J																			
2012_11SIPMP	MW-29	MW-29	11/12/2012	2																			
2013_02SIPMP	MW-29	MW-29	2/11/2013	16 J																			
2013_06SIPMP	MW-29	MW-29	6/3/2013	1.6																			
2013_08SIPMP	MW-29	MW-29	8/26/2013	41																			
2013_12SIPMP	MW-29	MW-29	12/2/2013	99																			
2014_03SIPMP	MW-29	MW-29	3/17/2014	0.5 U																			
2014_06SIPMP	MW-29	MW-29	6/1/2014	0.49 J																			
2014_09SIPMP	MW-29	MW-29	9/28/2014	170																			
2014_11SIPMP	MW-29	MW-29	11/16/2014	44																			
2015_02SIPMP	MW-29	MW-29	2/23/2015	59																			
2015_09SIPMP	MW-29	MW-29	9/13/2015	11																			
2015_12SIPMP	MW-29	MW-29	12/6/2015	2.4																			
2016_02SIPMP	MW-29	MW-29	2/28/2016	0.5 U																			
2016_06SIPMP	MW-29	MW-29	6/5/2016	1.3 U																			
2008_01LF	MW-3	MW-3	1/9/2008	480	0.019 U	0.041	0.0084 J	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.017 J	0.0026 U	0.11	0.005 U	0.0035 U	0.1764	
2008_03	MW-3	MW-3	2/26/2008	2700																			
2008_SI	MW-3	MW-3	4/29/2008	1200	1.3	0.51	0.14	0.034	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.36	0.0026 U	3.9	0.024	0.0035 U	6.268	
2008_SI	MW-3	MW-3	7/29/2008	1800	1.2	0.66	0.15	0.077	0.0026 U	0.0043 U	0.0042 J	0.0029 J	0.0025 U	0.0034 U	0.0025 U	0.0044 U	1.1	0.02 U	6.5				

Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzol[a]anthracene	Benzol[a]pyrene	Benzol[b]fluoranthene	Benzol[b,h,j]perylene	Benzol[b]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2012_08SIPMP	MW-3	MW-3	8/20/2012	81	0.022 U	0.022 U	0.022 U	0.022 U	0.0034 J	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.08	0.022 U	0.022 U	0.0834	
2012_11SIPMP	MW-3	MW-3	11/12/2012	42	0.023	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.005 J	0.02 U	0.011 U	0.0071 U	0.02 U	0.028
2013_02SIPMP	MW-3	MW-3	2/11/2013	110 J	0.0039 J	0.019 U	0.019 U	0.0068 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.013 J	0.019 U	0.019 U	0.0237	
2013_06SIPMP	MW-3	MW-3	6/3/2013	130	0.0025 U	0.02 U	0.02 U	0.0094 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.021 U	0.02 U	0.02 U	0.0094	
2013_08SIPMP	MW-3	MW-3	8/25/2013	85																			
2013_12SIPMP	MW-3	MW-3	12/1/2013	100	0.0071 U	0.015 J	0.013 J	0.012 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.058	0.02 U	0.12	0.016 U	0.02 U	0.218
2014_03SIPMP	MW-3	MW-3	3/16/2014	0.5 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.044	0.02 U	0.02 U	0.044	
2014_06SIPMP	MW-3	MW-3	6/1/2014	11	0.0025 J	0.019 U	0.019 U	0.0065 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.037	0.019 U	0.019 U	0.046	
2014_09SIPMP	MW-3	MW-3	9/28/2014	8	0.0032 J	0.02 U	0.02 U	0.0032 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.017 J	0.02 U	0.02 U	0.0234	
2014_11SIPMP	MW-3	MW-3	11/16/2014	720	0.018 J	0.081	0.037	0.038	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.1	0.02 U	0.02 U	0.48	0.02 U	0.02 U	0.754
2015_02SIPMP	MW-3	MW-3	2/23/2015	19	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND
2015_09SIPMP	MW-3	MW-3	9/13/2015	1500	0.02 U	0.18	0.028 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.33	0.02 U	0.022 U	0.02 U	0.02 U	0.51
2015_12SIPMP	MW-3	MW-3	12/6/2015	280	0.019 U	0.038 U	0.038 J	0.004 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.13	0.019 U	0.03 U	0.025 U	0.019 U	0.172
2016_02SIPMP	MW-3	MW-3	2/28/2016	1.1	0.019 U	0.019 U	0.019 U	0.0035 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0035 J	
2016_06SIPMP	MW-3	MW-3	6/5/2016	25	0.019 U	0.019 U	0.019 U	0.048 U	0.0031 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.049 U	0.076 U	0.019 U	0.0031 J	
2008_01	MW-30	MW-30	1/10/2008	0.08 U																			
2008_03	MW-30	MW-30	2/26/2008	0.18 J																			
2008_SI	MW-30	MW-30	4/28/2008	0.08 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.019 U	0.005 U	0.0035 U	ND	
2008_SI	MW-30	MW-30	7/28/2008	0.08 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.019 U	0.005 U	0.007 J	0.007	
2008_SI	MW-30	MW-30	10/21/2008	0.08 U	0.019 U	0.0086 J	0.0034 U	0.0036 U	0.0034 J	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 J	0.019 U	0.0026 U	0.026 U	0.024 U	0.0042 J	0.0206	
2009_SI	MW-30	MW-30	2/11/2009	0.16 U	0.019 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.019 U	0.005 U	0.0035 U	ND	
2009_SI	MW-30	MW-30	5/4/2009	0.16 U	0.019 U	0.0044 U	0.0034 U	0.0036 U	0.0028 J	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0044 J	0.0026 U	0.05 U	0.0054 J	0.0035 U	0.0126	
2009_SI	MW-30	MW-30	8/3/2009	0.16 U	0.019 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.024 U	0.005 U	0.0035 U	ND	
2009_SI	MW-30	MW-30	11/16/2009	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.011 U	0.005 U	0.0035 U	ND	
2010_02SIPMP	MW-30	MW-30	2/8/2010	0.16 U	0.0042 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0091 U	0.0038 U	0.0026 U	0.039	0.005 U	0.0035 U	0.039	
2010_05SIPMP	MW-30	MW-30	5/24/2010	0.07 U	0.0064 J	0.0044 U	0.0034 U	0.0036 U	0.019 U	0.0043 U	0.0023 U	0.0049 J	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0043 J	0.013 J	0.005 U	0.0042 J	0.0328	
2010_08SIPMP	MW-30	MW-30	8/17/2010	0.12 J	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.031				

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

### **Former J.H. Baxter Wood Treating Facility**

*Arlington, Washington*

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

## **Former J.H. Baxter Wood Treating Facility**

*Arlington, Washington*

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

## **Former J.H. Baxter Wood Treating Facility**

*Arlington, Washington*

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2013_02SIPMP	MW-34	MW-34	2/11/2013	590 J																			
2013_06SIPMP	MW-34	MW-34	6/3/2013	190																			
2013_08SIPMP	MW-34	MW-34	8/26/2013	180																			
2013_12SIPMP	MW-34	MW-34	12/2/2013	590																			
2014_03SIPMP	MW-34	MW-34	3/17/2014	110																			
2014_06SIPMP	MW-34	MW-34	6/1/2014	270																			
2014_09SIPMP	MW-34	MW-34	9/28/2014	900																			
2014_11SIPMP	MW-34	MW-34	11/16/2014	250																			
2015_02SIPMP	MW-34	MW-34	2/23/2015	1800																			
2015_09SIPMP	MW-34	MW-34	9/13/2015	100																			
2015_12SIPMP	MW-34	MW-34	12/6/2015	54																			
2016_02SIPMP	MW-34	MW-34	2/28/2016	0.5 U																			
2016_06SIPMP	MW-34	MW-34	6/5/2016	1.3 U																			
2008_01	MW-35	MW-35	1/8/2008	0.08 U	0.0026 J	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.0077 J	0.005 U	0.0035 U	0.0103	
2008_SI	MW-35	MW-35	4/29/2008	0.08 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	N	
2008_SI	MW-35	MW-35	7/29/2008	0.08 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.003 U	0.005 U	0.0035 U	N	
2008_SI	MW-35	MW-35	10/21/2008	0.08 U																			
2009_SI	MW-35	MW-35	2/10/2009	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.003 U	0.005 U	0.0035 U	N	
2009_SI	MW-35	MW-35	5/5/2009	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.003 U	0.005 U	0.0035 U	N	
2009_SI	MW-35	MW-35	8/4/2009	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.047 U	0.005 U	0.0035 U	N	
2009_SI	MW-35	MW-35	11/17/2009	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.1 U	0.005 U	0.0035 U	N	
2010_02SIPMP	MW-35	MW-35	2/9/2010	0.16 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.039	0.005 U	0.0035 U	0.039	
2010_05SIPMP	MW-35	MW-35	5/25/2010	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.02 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.052	0.005 U	0.0035 U	0.052	
2010_08SIPMP	MW-35	MW-35	8/18/2010	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.065	0.005 U	0.0035 U	0.065	
2010_11SIPMP	MW-35	MW-35	11/17/2010	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.021 U	0.005 U	0.0035 U	N	
2011_02SIPMP	MW-35	MW-35	2/9/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	N	
2011_05SIPMP	MW-35	MW-35	5/16/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.023 U	0.005 U	0.0035 U	N	
2011_08SIPMP	MW-35	MW-35	8/23/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.003 U	0.005 U	0.0035 U	N	
2011_11SIPMP	MW-35	MW-35	11/2/2011	0.07 U	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.07 U	0.005 U	0.0035 U	N	
2012_02SIPMP	MW-35	MW-35	2/13/2012	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.029	0.02 U	0.02 U	0.029	
2012_05SIPMP	MW-35	MW-35	4/30/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 J	0.019 U	0.019 U	0.0227	
2012_08SIPMP	MW-35	MW-35	8/20/2012	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.063	0.019 U	0.019 U	0.063	
2012_11SIPMP	MW-35	MW-35	11/12/2012	0.5 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.012 U	0.02 U	0.02 U	
2013_02SIPMP	MW-35	MW-35	2/11/2013	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.024 J	0.019 U	0.019 U	0.024
2013_06SIPMP	MW-35	MW-35	6/3/2013	0.5 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.018 U	0.02 U	0.02 U	0.02 U	
2013_08SIPMP	MW-35	MW-35	8/25/2013	0.23 U																			
2013_12SIPMP	MW-35	MW-35	12/1/2013	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.054	0.0098 U	0.019 U	0.054	
2014_03SIPMP	MW-35	MW-35	3/16/2014	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.033	0.019 U	0.019 U	0.033	
2014_06SIPMP	MW-35	MW-35	6/1/2014	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019	0.019 U	0.019 U	0.019	
2014_09SIPMP	MW-35	MW-35	9/28/2014	0.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.025	0.019 U	0.019 U	0.025	
2014_11SIP																							

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benz[a]pyrene	Benz[b]fluoranthene	Benz[e,h,j]perylene	Benz[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2011_05SIPMP	MW-36	MW-36	5/15/2011	90	0.0023 U	0.0044 U	0.0034 U	0.0073 J	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	0.0073	
2011_08SIPMP	MW-36	MW-36	8/22/2011	55	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.02 U	0.005 U	0.0035 U	ND	
2011_11SIPMP	MW-36	MW-36	11/1/2011	59	0.02 U	0.0044 U	0.0034 U	0.007 J	0.0026 U	0.017 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0057 J	0.0026 U	0.051 U	0.012 U	0.0035 U	0.0127	
2012_02SIPMP	MW-36	MW-36	2/12/2012	73	0.0027 J	0.02 U	0.02 U	0.0089 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.051	0.02 U	0.02 U	0.0826	
2012_05SIPMP	MW-36	MW-36	4/29/2012	200 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019	0.019 U	0.019 U	0.019	
2012_08SIPMP	MW-36	MW-36	8/19/2012	140	0.02 U	0.02 U	0.02 U	0.0067 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.039 J	0.02 U	0.02 U	0.02 U	0.02 U	0.0106	
2012_11SIPMP	MW-36	MW-36	11/1/2012	110	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND	
2013_02SIPMP	MW-36	MW-36	2/10/2013	260 J	0.0043 J	0.019 U	0.019 U	0.012 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0056 J	0.019 U	0.0068 J	0.019 U	0.019 U	0.0287	
2013_06SIPMP	MW-36	MW-36	6/3/2013	230	0.02 U	0.02 U	0.02 U	0.014 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.024 U	0.02 U	0.02 U	0.014	
2013_08SIPMP	MW-36	MW-36	8/25/2013	130																			
2013_12SIPMP	MW-36	MW-36	12/1/2013	120	0.0039 U	0.019 U	0.019 U	0.017 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0084 J	0.019 U	0.054	0.0087 U	0.019 U	0.0794	
2014_03SIPMP	MW-36	MW-36	3/16/2014	150	0.0034 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0324	
2014_06SIPMP	MW-36	MW-36	6/2/2014	130	0.019 U	0.019 U	0.019 U	0.011 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.03	
2014_09SIPMP	MW-36	MW-36	9/29/2014	120	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.016 J	0.019 U	0.019 U	0.016		
2014_11SIPMP	MW-36	MW-36	11/17/2014	120	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0048 NJ	0.019 U	0.019 U	0.019 U	0.0218 J	
2015_02SIPMP	MW-36	MW-36	2/23/2015	120	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0054 J	
2015_09SIPMP	MW-36	MW-36	9/14/2015	86	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND	
2015_12SIPMP	MW-36	MW-36	12/7/2015	31	0.03 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	ND
2016_02SIPMP	MW-36	MW-36	2/28/2016	140	0.035	0.019 U	0.019 U	0.0096 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0091 J	0.019 U	0.019 U	0.0055 J	0.019 U	0.0592 J	
2016_06SIPMP	MW-36	MW-36	6/6/2016	14	0.019 U	0.019 U	0.019 U	0.048 U	0.0033 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.088 U	0.0076 U	0.0067 J	0.010 J
2008_01	MW-37	MW-37	1/8/2008	770	0.011 J	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.37	0.005 U	0.0035 U	0.381	
2008_03	MW-37	MW-37	2/26/2008	1100																			
2008_SI	MW-37	MW-37	4/29/2008	1000	0.073	0.0044 U	0.016 J	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	1.5	0.005 U	0.0035 U	1.589	
2008_SI	MW-37	MW-37	7/29/2008	760	0.02 U	0.0044 U	0.0034 U	0.022	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.14	0.005 U	0.0035 U	0.162	
2008_SI	MW-37	MW-37	10/20/2008	250	0.0023 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.0083 J	0.005 U	0.0035 U	0.0083	
2009_SI	MW-37	MW-37	2/10/2009	770	0.037 U	0.0045 J	0.012 J	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	1.1	0.005 U	0.0035 U	1.1165	
2009_SI	MW-37	MW-37	5/5/2009	750	0.051	0.0044 U	0.011 J	0.0															

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**  
**Former J.H. Baxter Wood Treating Facility**  
*Arlington, Washington*

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzol(b)fluoranthene	Benzol(s,h,i)perylene	Benzol(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs (calculated)	
				( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )	( $\mu\text{g/L}$ )									
2015_09SIPMP	MW-40	MW-40	9/14/2015	520																			
2015_12SIPMP	MW-40	MW-40	12/7/2015	800																			
2016_02SIPMP	MW-40	MW-40	2/29/2016	360																			
2016_06SIPMP	MW-40	MW-40	6/6/2016	140																			
2010_08SIPMP	MW-41	MW-41	8/17/2010	420																			
2010_11SIPMP	MW-41	MW-41	11/16/2010	300																			
2011_02SIPMP	MW-41	MW-41	2/8/2011	240																			
2011_05SIPMP	MW-41	MW-41	5/15/2011	110																			
2011_08SIPMP	MW-41	MW-41	8/22/2011	300																			
2011_11SIPMP	MW-41	MW-41	11/1/2011	340																			
2012_02SIPMP	MW-41	MW-41	2/12/2012	220																			
2012_03SIPMP	MW-41	MW-41	4/29/2012	110 J																			
2012_08SIPMP	MW-41	MW-41	8/19/2012	200																			
2012_11SIPMP	MW-41	MW-41	11/11/2012	220																			
2013_02SIPMP	MW-41	MW-41	2/10/2013	49 J																			
2013_06SIPMP	MW-41	MW-41	6/2/2013	160	0.0043 U	0.02 U	0.02 U	0.0071 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.054	0.02 U	0.02 U	0.0611	
2013_08SIPMP	MW-41	MW-41	8/25/2013	340																			
2013_12SIPMP	MW-41	MW-41	12/1/2013	310																			
2014_03SIPMP	MW-41	MW-41	3/16/2014	340																			
2014_06SIPMP	MW-41	MW-41	6/2/2014	320																			
2014_09SIPMP	MW-41	MW-41	9/29/2014	410																			
2014_11SIPMP	MW-41	MW-41	11/17/2014	350																			
2015_02SIPMP	MW-41	MW-41	2/23/2015	340																			
2015_09SIPMP	MW-41	MW-41	9/14/2015	420 J+																			
2015_12SIPMP	MW-41	MW-41	12/7/2015	430																			
2016_02SIPMP	MW-41	MW-41	2/29/2016	380																			
2016_06SIPMP	MW-41	MW-41	6/6/2016	330																			
2010_08SIPMP	MW-42	MW-42	8/16/2010	1.2																			
2010_11SIPMP	MW-42	MW-42	11/15/2010	1.2	0.02 U	0.0044 U	0.0034 U	0.0036 U	0.0026 U	0.0043 U	0.0023 U	0.0029 U	0.0025 U	0.0034 U	0.0025 U	0.0044 U	0.0038 U	0.0026 U	0.04 U	0.005 U	0.0035 U	ND	
2011_02SIPMP	MW-42	MW-42	2/7/2011	2.2																			
2011_05SIPMP	MW-42	MW-42	5/16/2011	14																			
2011_08SIPMP	MW-42	MW-42	8/23/2011	17																			
2011_11SIPMP	MW-42	MW-42	11/2/2011	11																			
2012_02SIPMP	MW-42	MW-42	2/13/2012	0.071 NJ																			
2012_03SIPMP	MW-42	MW-42	5/1/2012	0.5 U																			
2012_08SIPMP	MW-42	MW-42	8/20/2012	12																			
2012_11SIPMP	MW-42	MW-42	11/12/2012	13																			
2013_02SIPMP	MW-42	MW-42	2/11/2013	44 J																			
2013_06SIPMP	MW-42	MW-42	6/3/2013	0.5 U																			
2013_08SIPMP	MW-42	MW-42	8/26/2013	3.4																			
2013_12SIPMP	MW-42	MW-42	12/2/2013	5.6																			
2014_03SIPMP	MW-42	MW-42	3/17/2014	5.4																			
2014_06SIPMP	MW-42	MW-42	6/2/2014	7.9																			
2014_09SIPMP	MW-42	MW-42	9/29/2014	6.5																			
2014_11SIPMP	MW-42	MW-42	11/17/2014	5.9	</td																		

**Table 3A. Summary of Groundwater Sampling Analytical Results: 2008 through First Half 2016**

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

Event	Well ID	Sample ID	Sample Date	Pentachlorophenol (µg/L)	2-Methylnaphthalene (µg/L)	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benzo(a)anthracene (µg/L)	Benzo(a)pyrene (µg/L)	Benzo(b)fluoranthene (µg/L)	Benzo(k)perylene (µg/L)	Benzo(k)fluoranthene (µg/L)	Chrysene (µg/L)	Dibenz(a,h)anthracene (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	Indeno(1,2,3-cd)pyrene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)	Total PAHs (calculated) (µg/L)		
2013_06SIPMP	MW-43	MW-43	6/3/2013	0.5 U																				
2013_08SIPMP	MW-43	MW-43	8/26/2013	0.2 U																				
2013_12SIPMP	MW-43	MW-43	12/2/2013	0.5 U																				
2014_03SIPMP	MW-43	MW-43	3/17/2014	0.5 U																				
2014_06SIPMP	MW-43	MW-43	6/2/2014	0.5 U																				
2014_09SIPMP	MW-43	MW-43	9/29/2014	0.5 U																				
2014_11SIPMP	MW-43	MW-43	11/17/2014	0.5 U																				
2015_02SIPMP	MW-43	MW-43	2/23/2015	0.63 UJ																				
2015_09SIPMP	MW-43	MW-43	9/14/2015	0.5 U																				
2015_12SIPMP	MW-43	MW-43	12/7/2015	0.5 U																				
2016_02SIPMP	MW-43	MW-43	2/29/2016	0.5 U																				
2016_06SIPMP	MW-43	MW-43	6/6/2016	13 U																				

**Notes**

µg/L = micrograms per liter

i = Method reporting limit/method detection limit is elevated due to a chromatographic interference.

J = Result is an estimated concentration that is less than the method reporting limit, but greater than or equal to the method detection limit.

N = Analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.

NA = Sample bottles arrived at laboratory broken and could not be analyzed.

ND = Not detected.

NJ = Analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

PAHs = polycyclic aromatic hydrocarbons.

U = Analyte was not detected above the reported sample quantification limit.

**Table 3B. Analytical Results of Pentachlorophenol and Breakdown Products in Extraction Well Composite Samples**  
**Former J.H. Baxter Wood Treating Facility**  
**Arlington, Washington**

Analyte <sup>1</sup>	Unit	2/23/2015 <sup>2,3</sup>	9/15/2015 <sup>2,4</sup>	12/7/2015 <sup>2,4</sup>	2/29/2016 <sup>2,4</sup>	6/6/2016 <sup>2,4</sup>
Pentachlorophenol	ug/L	590	380	430	620	550
2,4,5-Trichlorophenol	ug/L	1.0 UJ	1.0 UJ	ND	ND	ND
2,4,6-Trichlorophenol	ug/L	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	ug/L	-	--	--	--	--
2,3,5,6-Tetrachlorophenol	ug/L	-	--	--	--	--
3,4-Dichlorophenol	ug/L	-	--	--	--	--
3,5-Dichlorophenol	ug/L	-	--	--	--	--
Total Tetrachlorophenols <sup>5</sup>	ug/L	23	17	19	34	30

#### Notes

ug/L = micrograms per liter.

J = Result is an estimated concentration that is less than the method reporting limit, but greater than or equal to the method detection limit.

ND = not detected.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may be inaccurate.

1 Analysis by EPA method 8151M.

2 Composite samples do not include groundwater from extraction well EW-1, EW-3, EW-5, EW-6, and EW-7. EW-1, EW-5, and EW-6 were shut down due to water level condition in the infiltration trench. EW-7 was discontinued with approval from EPA in 2010. EW-3 was shut down during the second quarter was off during sample collection.

3 Sample composite from EW-2 and EW-4.

4 Sample contains water from EW-4 only.

4 Sample composite from EW-1, EW-2, and EW-4.

5 Total tetrachlorophenols comprises multiple tetrachlorophenol isomers, including 2,3,4,6-tetrachlorophenol and 2,3,5,6-tetrachlorophenol.

**Table 3C. Historical Analytical Results of Pentachlorophenol and Breakdown Products in Extraction Well Composite Samples**  
**Former J.H. Baxter Wood Treating Facility**  
**Arlington, Washington**

Sample ID	Sample Date	Comments <sup>2</sup>					
		2,4,5-Trichlorophenol ( $\mu\text{g/L}$ )	2,4,6-Tetrachlorophenol ( $\mu\text{g/L}$ )	2,3,4,6-Tetrachlorophenol ( $\mu\text{g/L}$ )	2,3,5,6-Tetrachlorophenol ( $\mu\text{g/L}$ )	3,4-Dichlorophenol ( $\mu\text{g/L}$ )	3,5-Dichlorophenol ( $\mu\text{g/L}$ )
EWCCMP030509	3/5/2009	1.0 U	1.0 U	15.0	2.0		
EWCCMP04D209	4/2/2009	1.0 U	1.0 U	15.0	2.5		
EWCCMP052609	5/26/2009	1.1 U	1.1 U	12.0	2.0		
EWCCMP070709	7/7/2009	1.0 U	1.0 U	9.1	1.2		
EW-1-EW-7	8/5/2009	0.98 U	0.98 U	8.9	1.3		
EWCCMP082709	8/21/2009	1.0 U	1.0 U	7.1	1.0		
EWCCMP093009	9/30/2009	1.0 U	1.0 U	9.4	1.4		
EW-1-EW-6	11/19/2009	0.96 U	0.96 U	10.0	1.9		
EWCCMP122809	12/28/2009	1.0 U	1.0 U	15.0	1.8		
EWCCMP12610	1/26/2010	0.99 U	0.99 U	16.0	1.8		
EW1-7	2/11/2010	1.1 U	1.1 U	8.9	1.2		
EWCCMP32410	3/24/2010	1.0 U	1.0 U	13.0	1.6		
EWCCMP42910	4/30/2010	1.1 U	1.1 U	11.0	1.4		
EW1-7	5/27/2010	0.96 U	0.96 U	5.2	1.0		
EWCCMP63010	6/30/2010	1.1 U	1.1 U	11.0	1.8		
EW1-7	8/19/2010	0.95 U	0.95 U	13.0	2.0		
EW1-6	12/7/2010	0.97 U	0.97 U	9.5	1.5		
Extraction Well Composite	2/12/2011	0.96 U	0.96 U	32.0	10.0		
EW1-4 Composite	5/18/2011	0.099 U	0.06 J				
EW1-4	8/25/2011	0.099 U	0.13 J				
EW1-4	11/3/2011	0.099 U	0.11 J				
EW1-4	2/14/2012	0.099 U	0.11 J				
EW1-4	5/3/2012	1.0 U	0.16 NJ				
EW2-4 COMP	8/20/2012	1.0 U	0.50 U				

**Table 3C. Historical Analytical Results of Pentachlorophenol and Breakdown Products in Extraction Well Composite Samples**  
**Former J.H. Baxter Wood Treating Facility**  
**Arlington, Washington**

Sample ID	Sample Date	Comments <sup>2</sup>					
		2,4,5-Tetrachlorophenol ( $\mu\text{g/L}$ )	2,4,6-Tetrachlorophenol ( $\mu\text{g/L}$ )	2,3,4,6-Tetrachlorophenol ( $\mu\text{g/L}$ )	2,3,5,6-Tetrachlorophenol ( $\mu\text{g/L}$ )	3,4-Dichlorophenol ( $\mu\text{g/L}$ )	3,5-Dichlorophenol ( $\mu\text{g/L}$ )
EW 1-4 COMP	11/12/2012	1.0	U	0.50	U	27	U
EW 1-4 COMP	2/11/2013	1.0	U	0.50	U	39	U
EW 1-4 COMP	6/4/2013	1.0	U	0.50	U	2.4	U
EW 1-4 COMP	8/26/2013	0.19	U	0.14	U	18	J
EW 1-4 COMP	12/2/2013	1.0	U	0.50	U	21	
EW 1-4 COMP	3/17/2014	1.0	U	0.50	U	15	
EW 1-4 COMP	6/2/2014	1.0	U	0.20	J	29	
EW 1-4 COMPOSITE	9/29/2014	0.24	J	0.50	U	31	
EW 1-4 COMPOSITE	11/17/2014	1.0	U	0.50	U	27	
EW 1-4 COMPOSITE	2/23/2015	1.0	UJ	0.50	U	23	
EW 1-4 COMPOSITE	9/15/2015	1.0	UJ	0.50	U	17	
EW 1-4 COMPOSITE	12/7/2015	1.0	UJ	0.50	U	19	
EW 1-4 COMPOSITE	2/29/2016	1.0	UJ	0.50	U	34	
EW 1-4 COMPOSITE	6/5/2016	1.0	U	0.50	U	30	

#### Notes

$\mu\text{g/L}$  = micrograms per liter.

J = Method reporting limit/method detection limit is elevated due to a chromatographic interference.

J = Result is an estimated concentration that is less than the method reporting limit, but greater than or equal to the method detection limit.

NJ = Analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

U = Analyte was not detected above the reported sample quantitation limit.

U = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may be inaccurate or imprecise.

1 Total tetrachlorophenols comprises multiple tetrachlorophenol isomers, including 2,3,4,6-tetrachlorophenol and 2,3,5,6-tetrachlorophenol.

2 EW-1, EW-5, and EW-6 were shut down due to a recurring high water level condition in the infiltration trench. EW-7 was discontinued with approval from the EPA in 2010. EW-3 was shut down during the second quarter 2013 and was off during sample collection.

**Table 3D. Analytical Results of Pentachlorophenol and Breakdown Products in Individual Extraction Wells**  
**Former J.H. Baxter Wood Treating Facility**  
**Arlington, Washington**

Sample ID	Sample Date	2,4,5-Trichlorophenol <sup>1</sup> ( $\mu\text{g/L}$ )	2,4,6-Trichlorophenol <sup>1</sup> ( $\mu\text{g/L}$ )	2,3,4,6-Tetrachlorophenol <sup>1</sup> ( $\mu\text{g/L}$ )	2,3,5,6-Tetrachlorophenol <sup>1</sup> ( $\mu\text{g/L}$ )	Pentachlorophenol <sup>1</sup> ( $\mu\text{g/L}$ )
EW-1	2/11/2010	1.0	U	1.0	U	7.5
EW-2	2/11/2010	1.0	U	1.0	U	30
EW-3	2/11/2010	1.0	U	1.0	U	40
EW-4	2/11/2010	1.0	U	1.0	U	5.7
EW-5	2/11/2010	1.0	U	1.0	U	1.0
EW-6	2/11/2010	1.0	U	1.0	U	1.0
EW-7	2/11/2010	1.0	U	1.0	U	1.0

**Notes**

$\mu\text{g/L}$  = micrograms per liter.

U = Analyte was not detected above the reported sample quantification limit.

ND = not detected.

1 Analysis by EPA method 8270D SIM.

**Table 4. Bacteriological Analysis Results for Heterotrophic Plate Count**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

Sample ID	Sample Date	Heterotrophic Plate Count <sup>1</sup> (CFU/ml)	Comments
EW 1-7	5/25/2010	1 U	Analyzed by Spectra Laboratories, Tacoma, WA
MW-3	5/25/2010	ND	Analyzed by Spectra Laboratories, Tacoma, WA
MW-3	11/16/2010	1 U	Analyzed by Edge Analytical Laboratories, Burlington, WA
EW 1-6	12/7/2010	95	Analyzed by Edge Analytical Laboratories, Burlington, WA

**Notes**

CFU/ml = colony forming units per milliliter.

J = Result is an estimated concentration that is less than the method reporting limit, but greater than or equal to the method detection limit.

U = Analyte was not detected above the reported sample quantification limit.

1 Analysis by SM 9215B.

**Table 5. Light Non-Aqueous Phase Liquid (LNAPL) Recovery**

Former J.H. Baxter Wood Treating Facility

Arlington, Washington

Date	Well ID	Weight (pounds)			Volume (gallons)
		Total	Material	LNAPL	
4/7/2008	MW-12	2.24	0.53	1.71	0.20
6/2/2008	MW-12	2.34	0.53	1.81	0.22
7/28/2008	MW-12	2.14	0.54	1.60	0.19
9/26/2008	MW-12	1.9	0.46	1.44	0.17
11/24/2008	MW-12	2.22	0.54	1.68	0.20
1/7/2009	MW-13	2.12	0.56	1.56	0.19
3/5/2009	MW-12	2.35	0.64	1.71	0.20
4/1/2009	MW-12	2.58	0.64	1.94	0.23
5/27/2009	MW-12	2.76	0.68	2.08	0.25
11/19/2009	MW-12	NA	NA	1.82	0.22
12/28/2009	MW-12	2.64	0.66	1.98	0.24
1/25/2010	MW-12	2.48	0.64	1.84	0.22
3/23/2010	MW-12	2.6	0.66	1.94	0.23
4/28/2010	MW-12	2.68	0.64	2.04	0.24
6/29/2010	MW-12	2.52	0.64	1.88	0.22
10/19/2010	MW-13	1.49	0.64	0.85	0.10
10/19/2010	MW-12	1.8	0.64	1.16	0.14
2/10/2011	MW-12	2.19	0.56	1.63	0.19
5/18/2011	MW-12	2.56	0.64	1.92	0.23
5/18/2011	MW-13	1.9	0.45	1.45	0.17
5/18/2011	MW-19	1.8	0.63	1.17	0.14
5/18/2011	MW-21	1.59	0.58	1.01	0.12
8/24/2011	MW-12	2.07	0.63	1.44	0.17
11/3/2011	MW-12	2.27	0.61	1.66	0.20
2/15/2012	MW-12	1.89	0.64	1.25	0.15
5/2/2012	MW-12	2.45	0.64	1.81	0.22
8/20/2012	MW-12	1.08	0.47	0.61	0.07
11/13/2012	MW-12	NC	NC	0	0.00
2/12/2013	MW-12	2.38	0.41	1.97	0.23
6/3/2013	MW-12	1.91	0.58	1.33	0.16
8/26/2013	MW-12	0.93	0.2	0.73	0.09
12/3/2013	MW-12	0.98	0.33	0.65	0.08
3/17/2014	MW-12	2.14	0.32	1.82	0.22
6/2/2014	MW-12	2.13	0.3	1.83	0.22
9/29/2014	MW-12	1.16	0.32	0.84	0.10
11/17/2014	MW-12	1.71	0.31	1.41	0.17
2/23/2015	MW-12	2.1	0.31	1.79	0.21
9/15/2015	MW-12	2.15	0.33	1.82	0.22
12/7/2015	MW-12	2.14	0.031	1.83	0.22
2/29/2016	MW-12	2.58	0.3	2.28	0.27

**Table 5. Light Non-Aqueous Phase Liquid (LNAPL) Recovery**

Former J.H. Baxter Wood Treating Facility

*Arlington, Washington*

Date	Well ID	Weight (pounds)			Volume (gallons)
		Total	Material	LNAPL	
6/5/2016	MW-12	3.06	0.44	2.62	0.31
<b>Total</b>				<b>63.9</b>	<b>7.62</b>

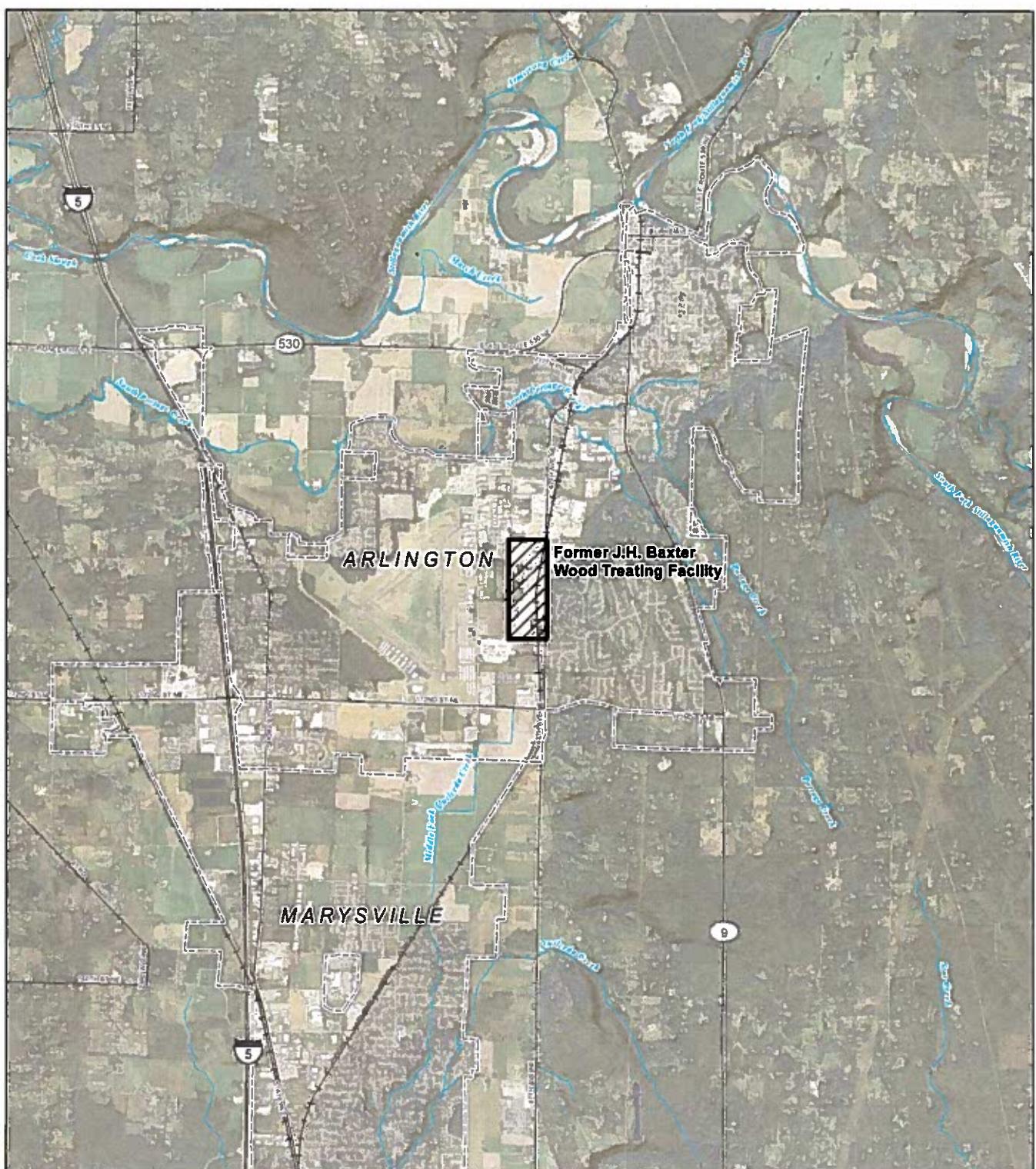
**Notes**

NA = not analyzed.

NC = no change, water level low.

## **Figures**

---

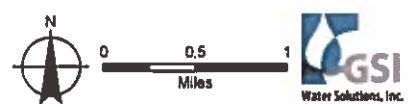


**LEGEND**

- Cities
- Railroads
- Major Roads
- ~~~~ Watercourses

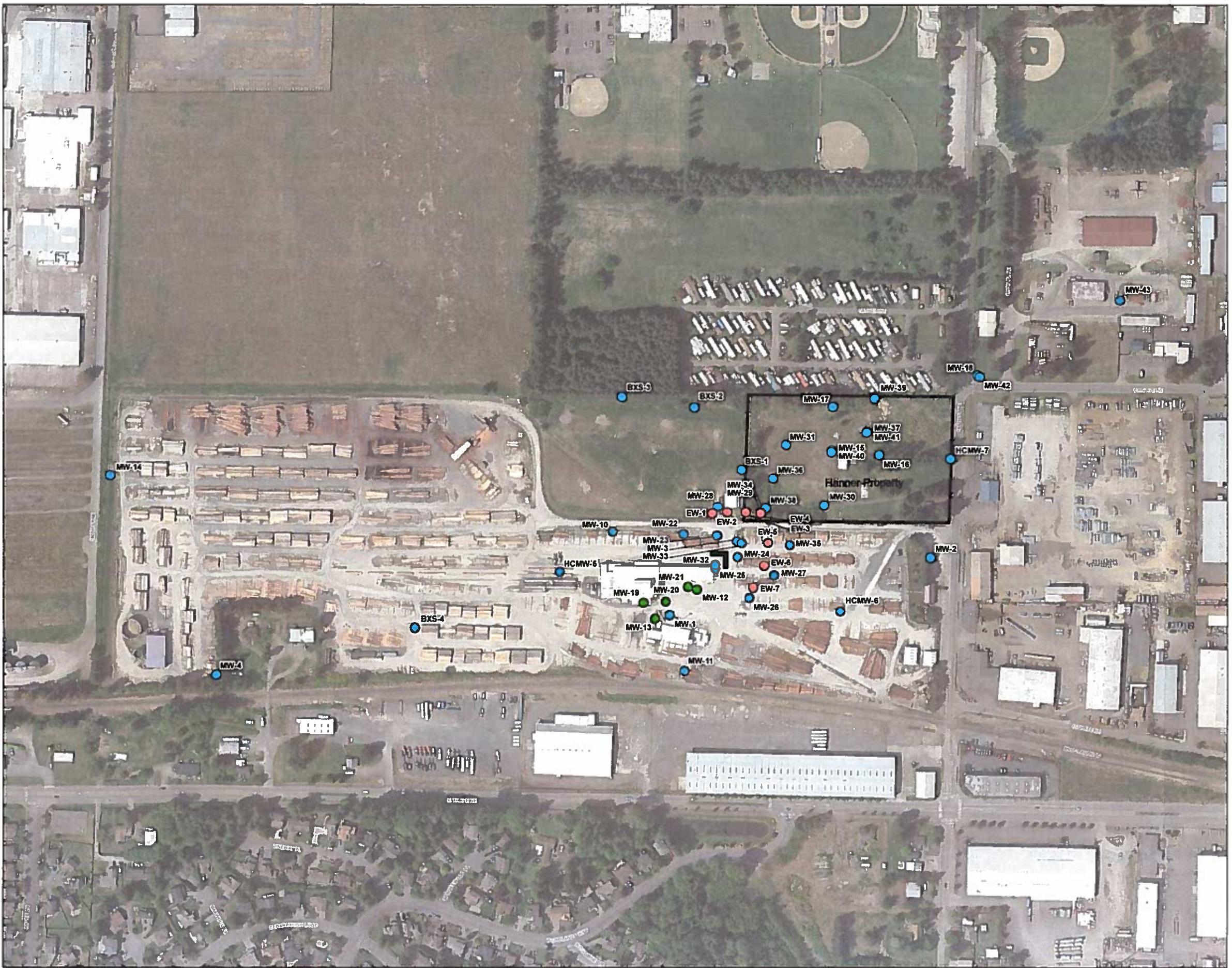
**MAP NOTES:**  
Date: July 23, 2016  
Data Sources: Aerial photo taken on September 28, 2013 by the USDA

**FIGURE 1**  
**Site Vicinity Map**  
**Former J.H. Baxter Wood Treating Facility**  
**Arlington, Washington**



**FIGURE 2**

Groundwater Monitoring Network  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



MAP NOTES:  
Date: July 25, 2016  
Data Sources: AMEC, ESRI. Air photo taken on May 2, 2015 by Google Earth



**FIGURE 3**

Groundwater Elevation Contour Map:  
First Quarter 2016

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

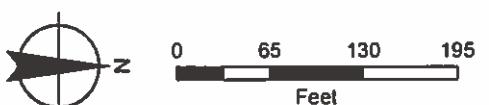


**LEGEND**

- Groundwater Elevation Contours (dashed where inferred)
- Shallow Monitoring Well (February 2016 Groundwater Elevation)
- Intermediate Monitoring Well (February 2016 Groundwater Elevation, not used for contouring)
- Extraction Well
- Infiltration Trench
- Infiltration Gallery Piping

**NOTES:**

- All elevations exist in NAVD88.
- Extraction wells are pumping while water level measurements are collected.
- NM = not measured.
- MW-30 not used for contouring.
- Intermediate Monitoring Wells not used for contouring.



**MAP NOTES:**

Date: July 25, 2016  
Data Sources: AMEC, ESRI, Air photo taken on May 2, 2015 by Google Earth

**FIGURE 4**

Groundwater Elevation Contour Map:  
Second Quarter 2016

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



**LEGEND**

- Groundwater Elevation Contours (dashed where inferred)
- Shallow Monitoring Well (June 2016 Groundwater Elevation)
- Intermediate Monitoring Well (June 2016 Groundwater Elevation, not used for contouring)
- Extraction Well
- Infiltration Trench
- Infiltration Gallery Piping

**NOTES:**

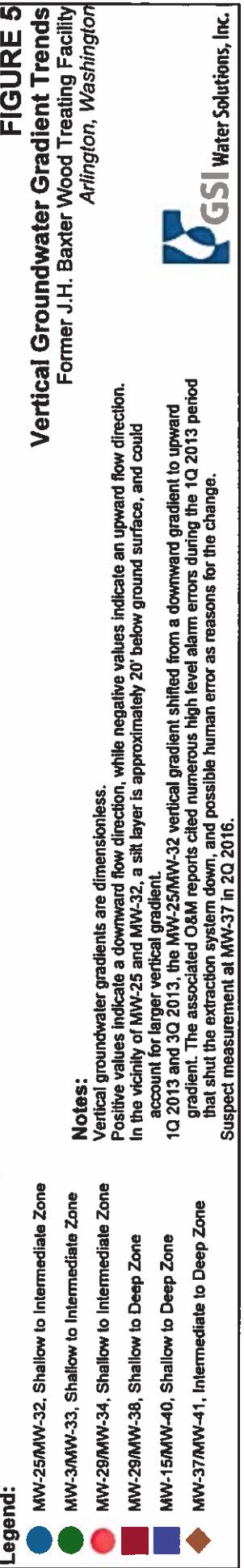
1. All elevations exist in NAVD88.
2. Extraction wells are pumping while water level measurements are collected.
3. NM = not measured.
4. MW-37 suspect measurement.
5. Intermediate Monitoring Wells not used for contouring.



**MAP NOTES:**

Date: September 14, 2016  
Data Sources: AMEC, ESRI, Air photo taken on May 2, 2015 by Google Earth

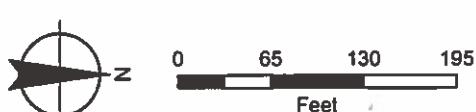
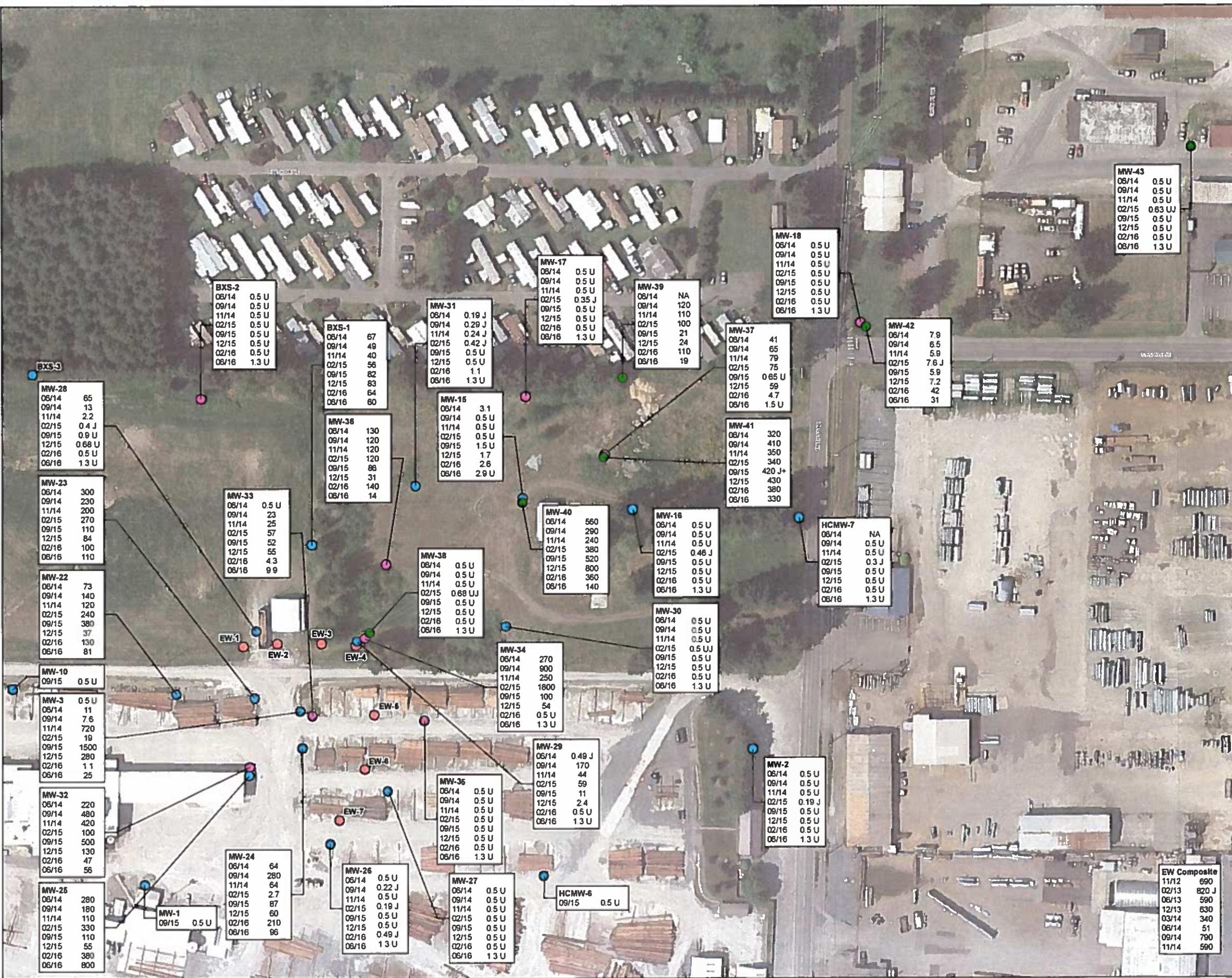




**FIGURE 6**

Pentachlorophenol in Groundwater:  
Second Quarter 2014 -  
Second Quarter 2016

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



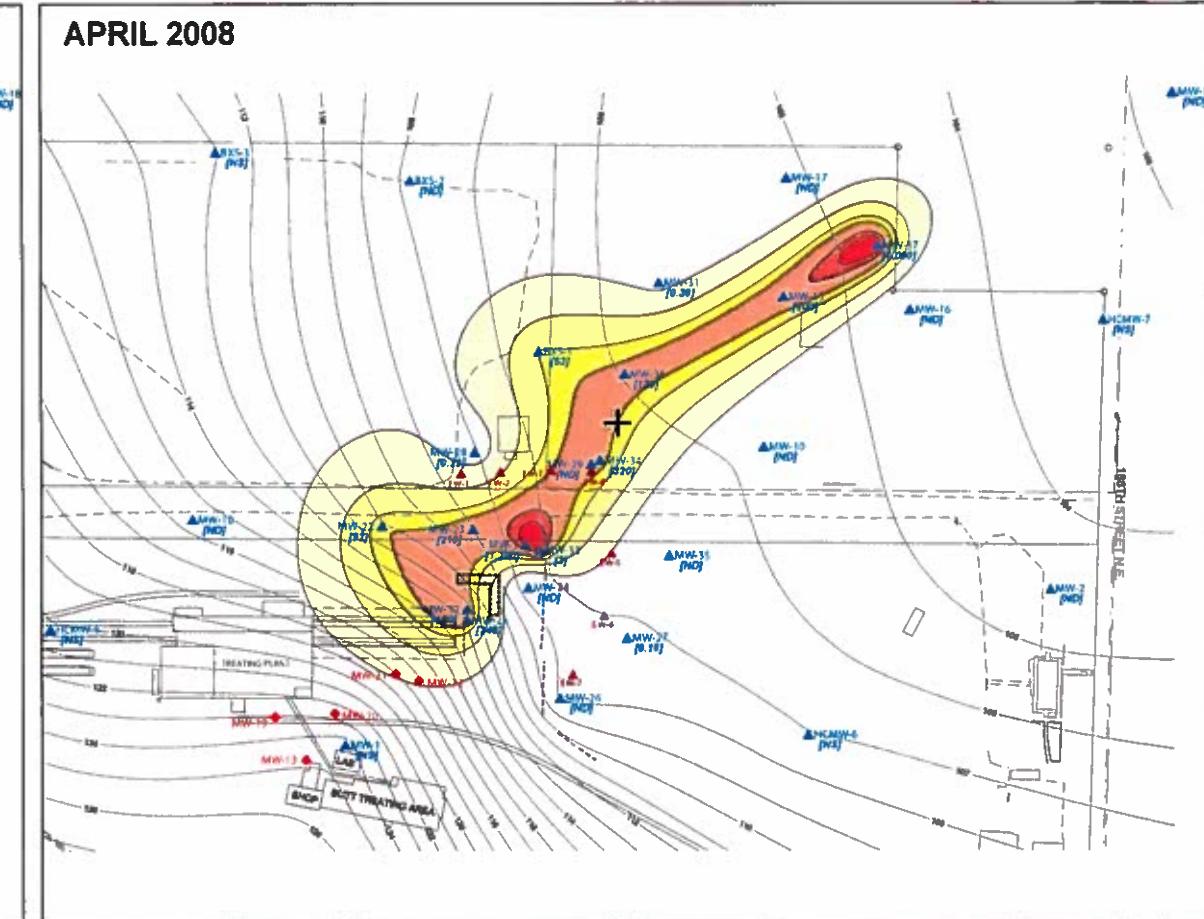
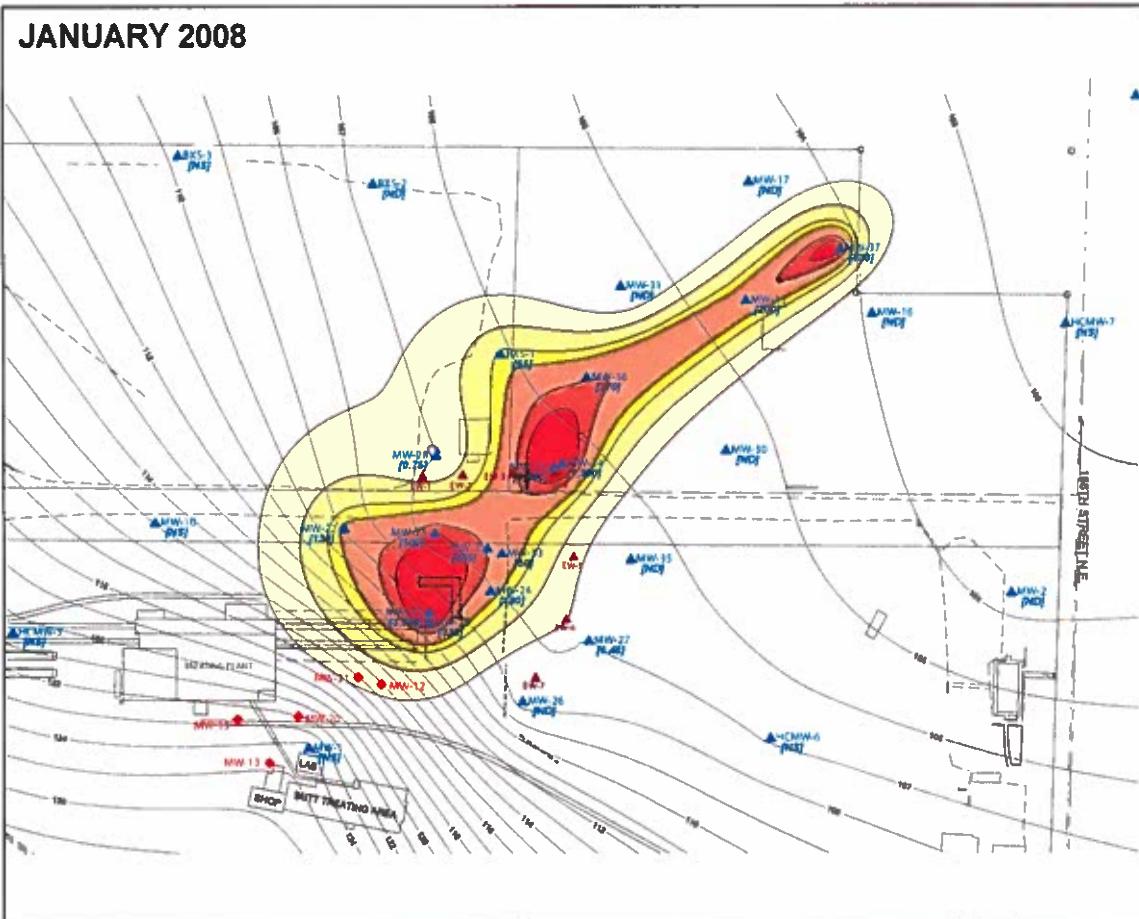


FIGURE 7

**Pentachlorophenol Isopleth Map: 2008**  
**Former J.H. Baxter Wood Treating Facility**  
**Arlington, Washington**

## LEGEND

- Legend:**

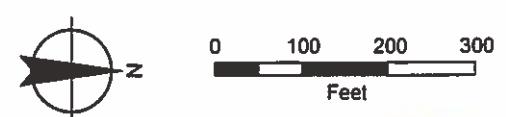
  - ▲ Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
  - ◆ LNAPL Recovery Well
  - △ Groundwater Extraction Well
  - [Dashed Box] Infiltration Gallery
  - ND Not-Detected
  - NS Not Sampled
  - ⊕ PCP Plume Center of Mass
  - 107 - Groundwater Elevation Isopleth

**Pentachlorophenol Concentration (ug/L)**

Pentachlorophenol Concentration (ug/L)
>500
>300 - 500
>100 - 300
>50 - 100
>10 - 50
>1 - 10

#### **PCP Plume Stability Data Summary**

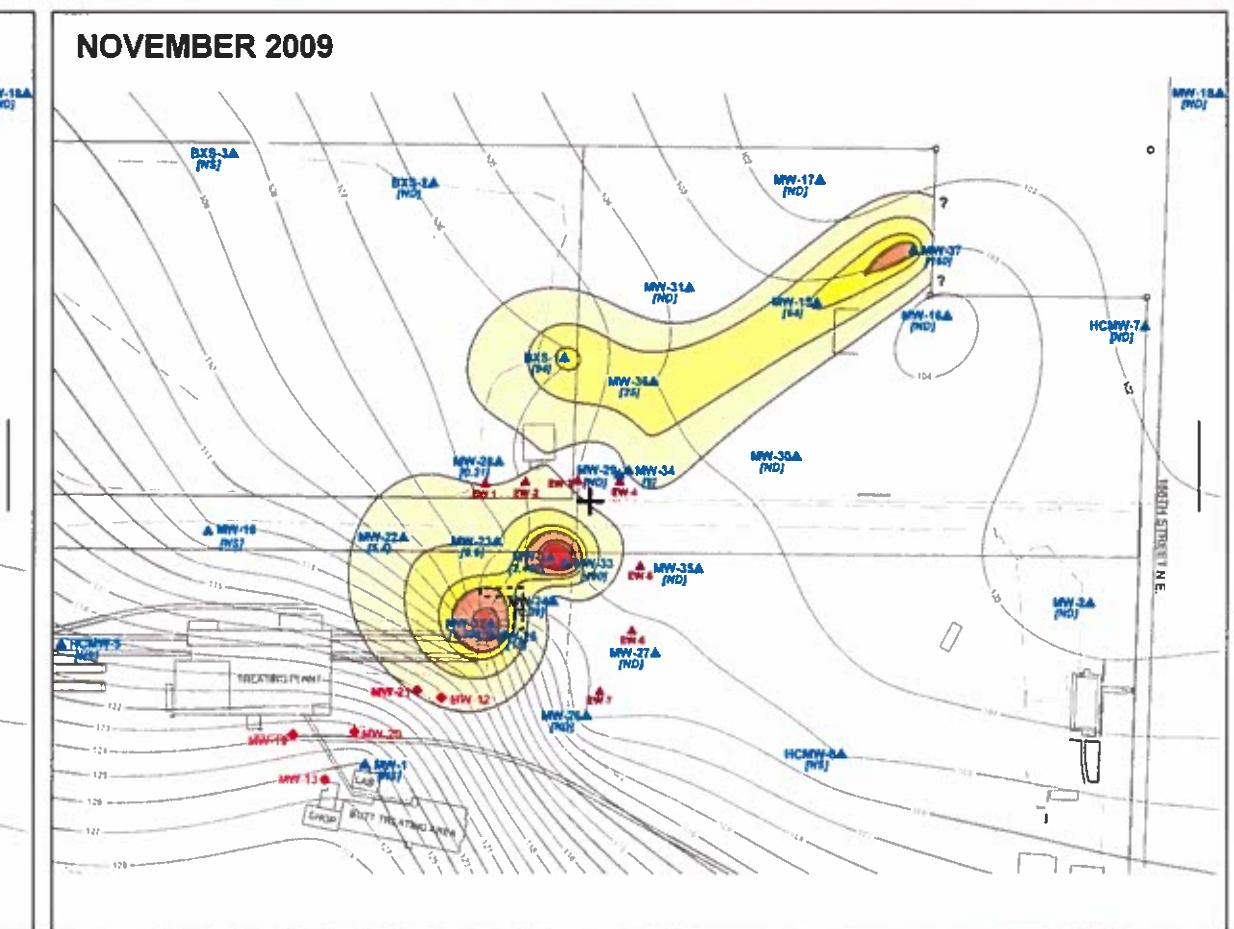
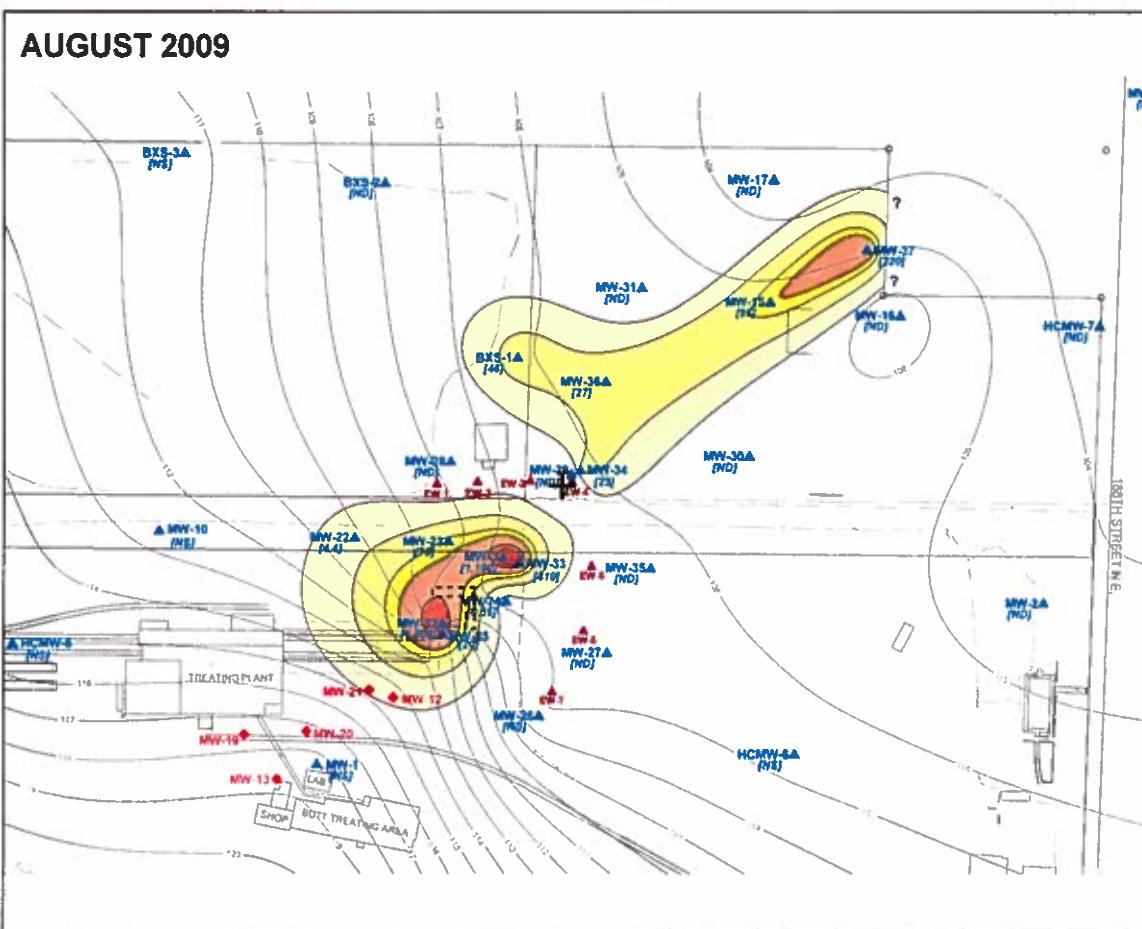
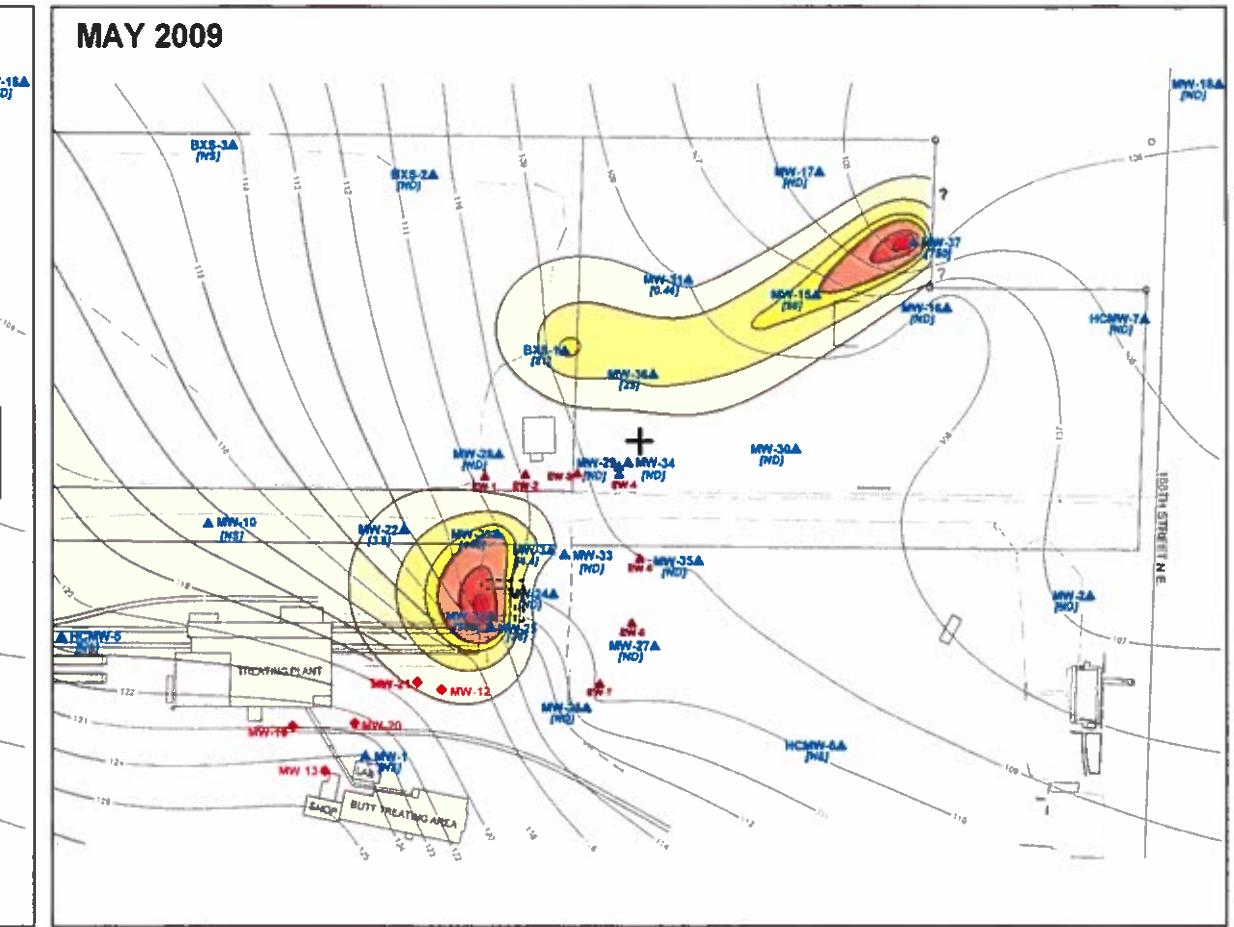
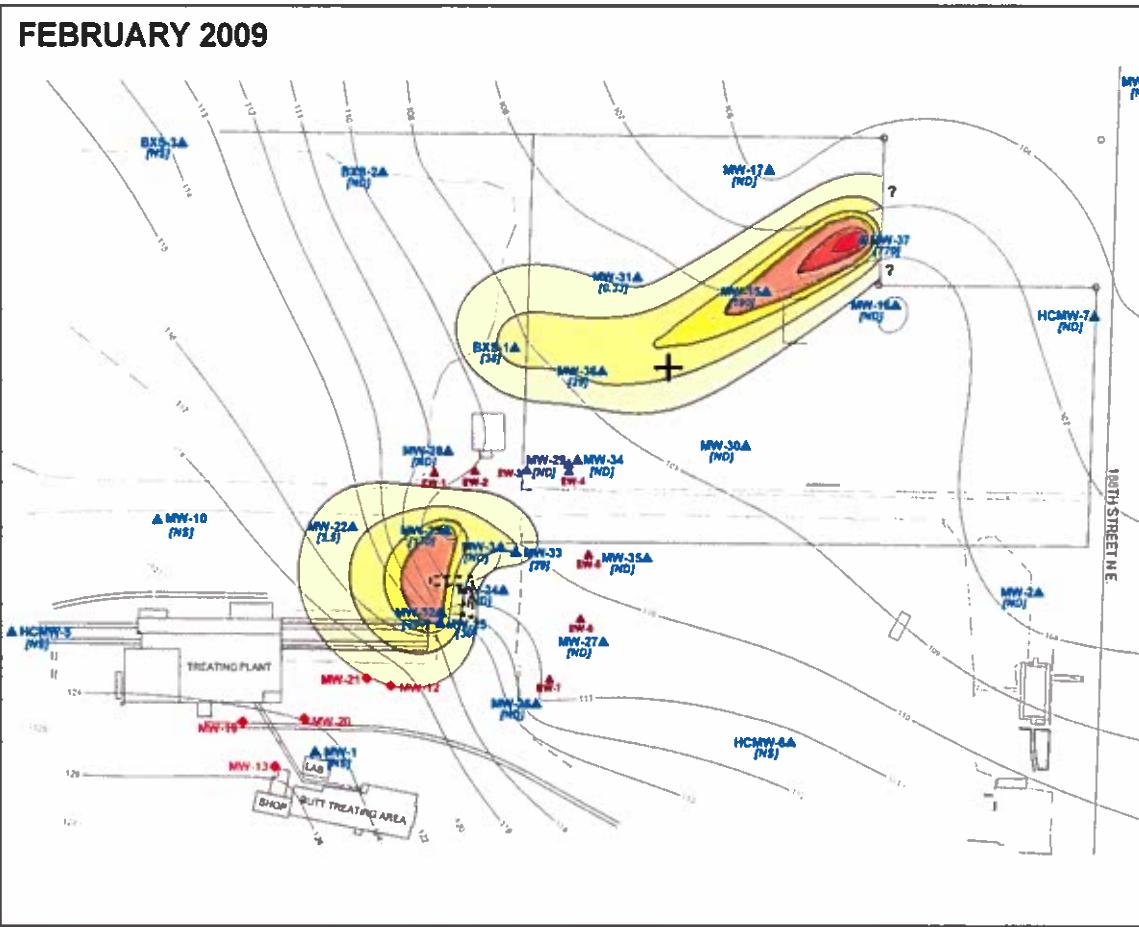
<b>January 2008</b>	
Plume Area:	4.4 Acres
Plume Avg. Concentration:	116 ug/L
Plume Mass:	12.4 Pounds
<b>April 2008</b>	
Plume Area:	3.9 Acres
Plume Avg. Concentration:	59.7 ug/L
Plume Mass:	5.7 Pounds
<b>July 2008</b>	
Plume Area:	3.4 Acres
Plume Avg. Concentration:	49.2 ug/L
Plume Mass:	4.1 Pounds
<b>October 2008</b>	
Plume Area:	4.2 Acres
Plume Avg. Concentration:	40.7 ug/L
Plume Mass:	4.1 Pounds



### **MAP NOTES**

**MAP NOTES:**  
Date: July 27, 2016  
Data Sources Premier Environmental Services Inc. Figures 8-11, 03/13/14





**FIGURE 8**

Pentachlorophenol Isopleth Map: 2009  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**LEGEND**

- ▲ Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
  - ◆ LNAPL Recovery Well
  - △ Groundwater Extraction Well
  - Infiltration Gallery
  - ND Not-Detected
  - NS Not Sampled
  - ⊕ PCP Plume Center of Mass
  - 107 - Groundwater Elevation Isopleth
- Pentachlorophenol Concentration (ug/L)**
- |            |
|------------|
| >500       |
| >300 - 500 |
| >100 - 300 |
| >50 - 100  |
| >10 - 50   |
| >1 - 10    |

**PCP Plume Stability Data Summary**

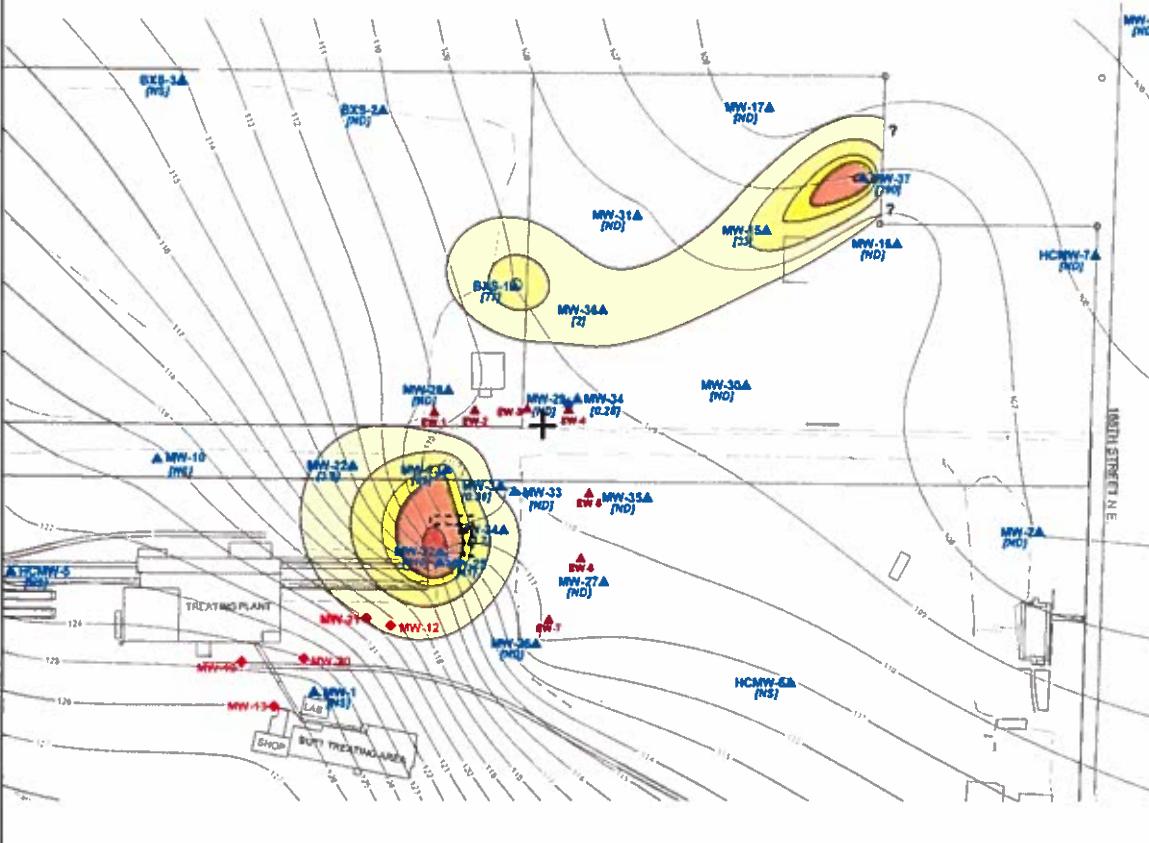
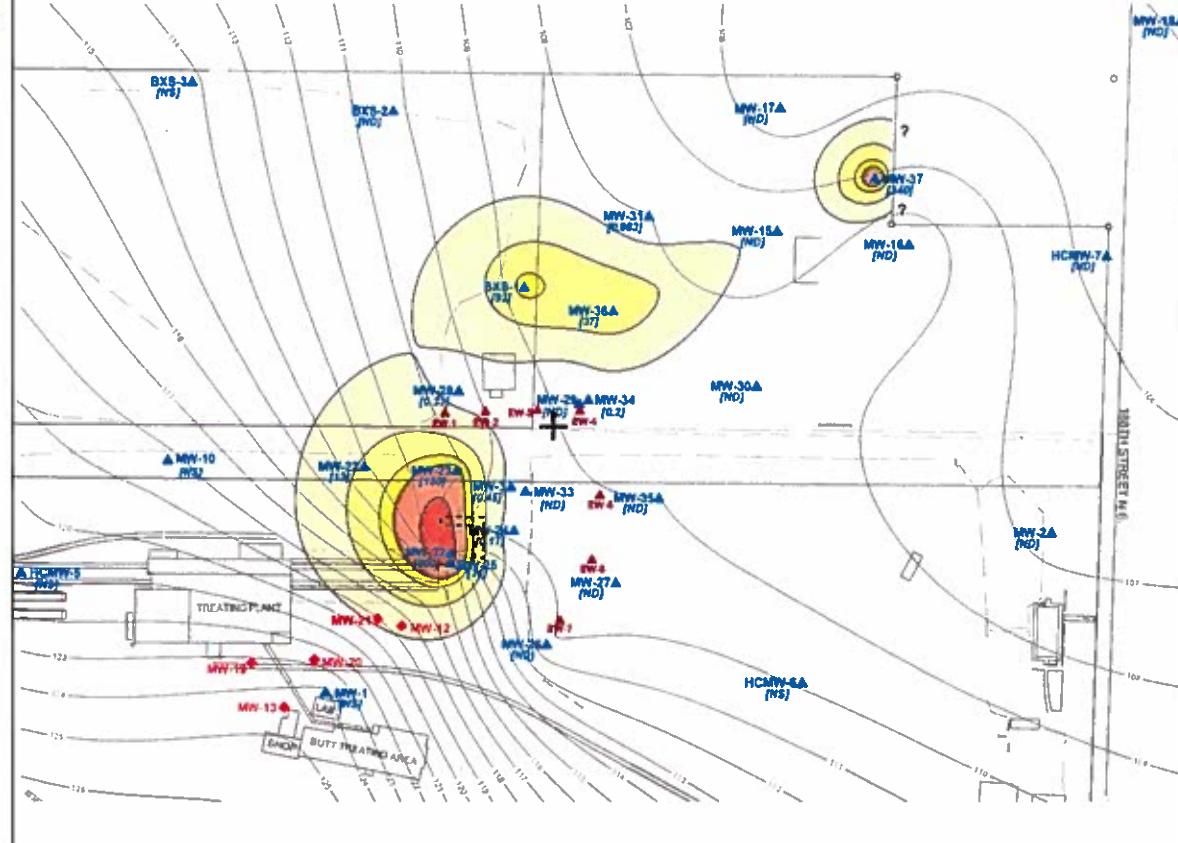
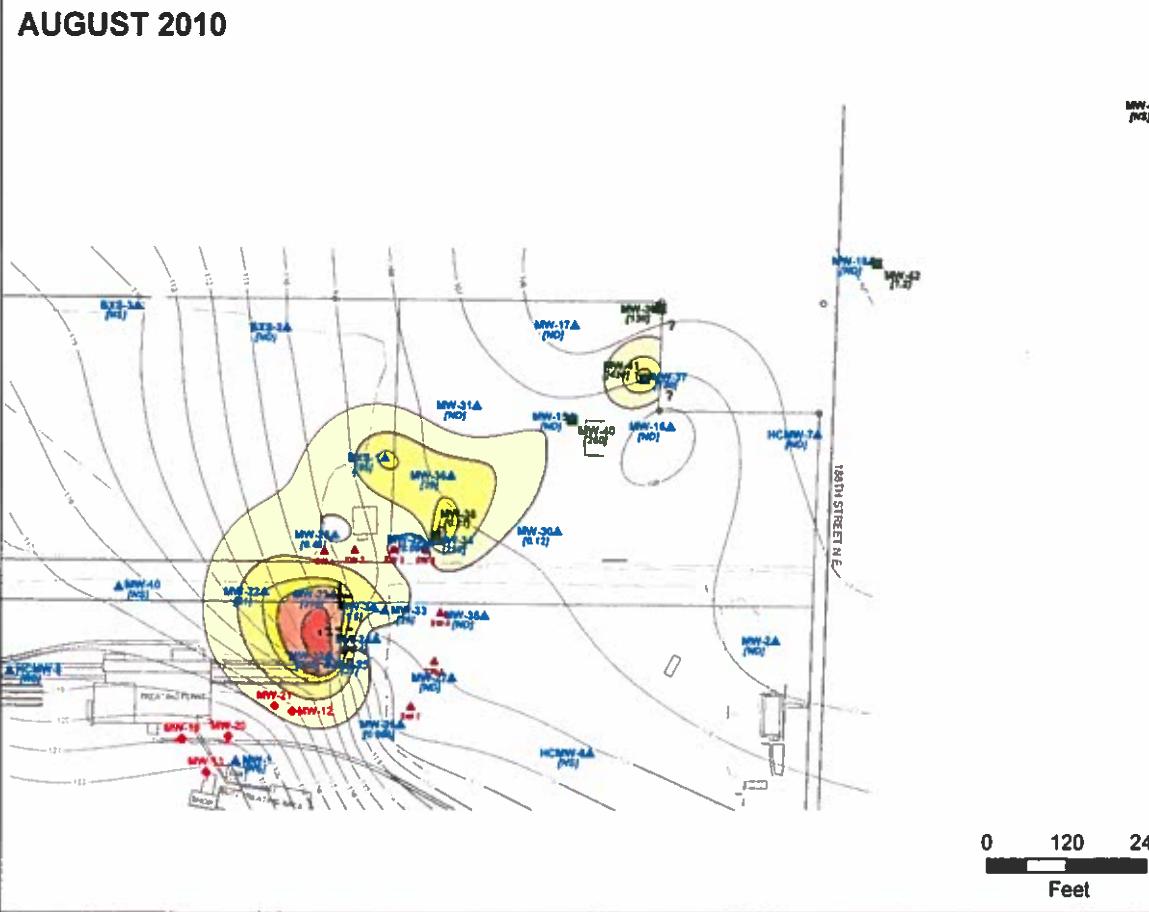
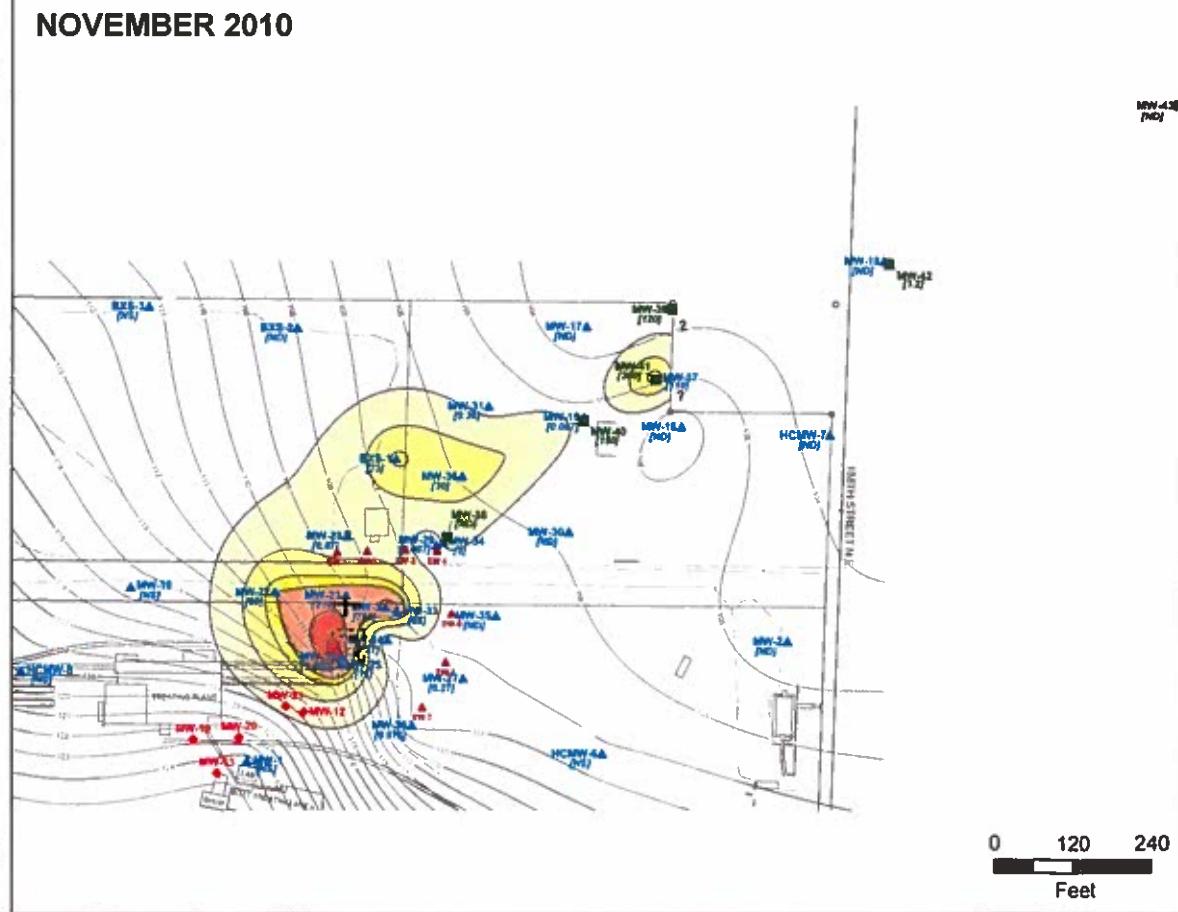
February 2009	Plume Area:	2.7 Acres
	Plume Avg. Concentration:	36.3 ug/L
	Plume Mass:	2.4 Pounds
May 2009	Plume Area:	2.7 Acres
	Plume Avg. Concentration:	41.9 ug/L
	Plume Mass:	2.7 Pounds
August 2009	Plume Area:	2.8 Acres
	Plume Avg. Concentration:	35.8 ug/L
	Plume Mass:	2.4 Pounds
November 2009	Plume Area:	3.1 Acres
	Plume Avg. Concentration:	28.3 ug/L
	Plume Mass:	2.2 Pounds



**MAP NOTES:**

Date: July 27, 2016  
Data Sources: Premier Environmental Services, Inc., Figures 12-15, 03/13/14

1

**FEBRUARY 2010****MAY 2010****AUGUST 2010****NOVEMBER 2010****FIGURE 9**

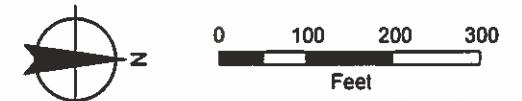
Pentachlorophenol Isopleth Map: 2010  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**LEGEND**

<span style="color: blue;">▲</span>	Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
<span style="color: black;">■</span>	Deep Monitoring Well and PCP Concentration (ug/L)
<span style="color: red;">◆</span>	LNAPL Recovery Well
<span style="color: orange;">△</span>	Groundwater Extraction Well
<span style="color: gray;">□</span>	Infiltration Gallery
<span style="color: gray;">ND</span>	Not-Detected
<span style="color: gray;">NS</span>	Not Sampled
<span style="color: gray;">+</span>	PCP Plume Center of Mass
<span style="color: gray;">—</span>	Groundwater Elevation Isopleth
<b>Pentachlorophenol Concentration (ug/L)</b>	
<span style="background-color: red; display: inline-block; width: 10px; height: 10px;"></span>	>500
<span style="background-color: orange; display: inline-block; width: 10px; height: 10px;"></span>	>300 - 500
<span style="background-color: yellow; display: inline-block; width: 10px; height: 10px;"></span>	>100 - 300
<span style="background-color: lightyellow; display: inline-block; width: 10px; height: 10px;"></span>	>50 - 100
<span style="background-color: paleyellow; display: inline-block; width: 10px; height: 10px;"></span>	>10 - 50
<span style="background-color: white; display: inline-block; width: 10px; height: 10px;"></span>	>1 - 10

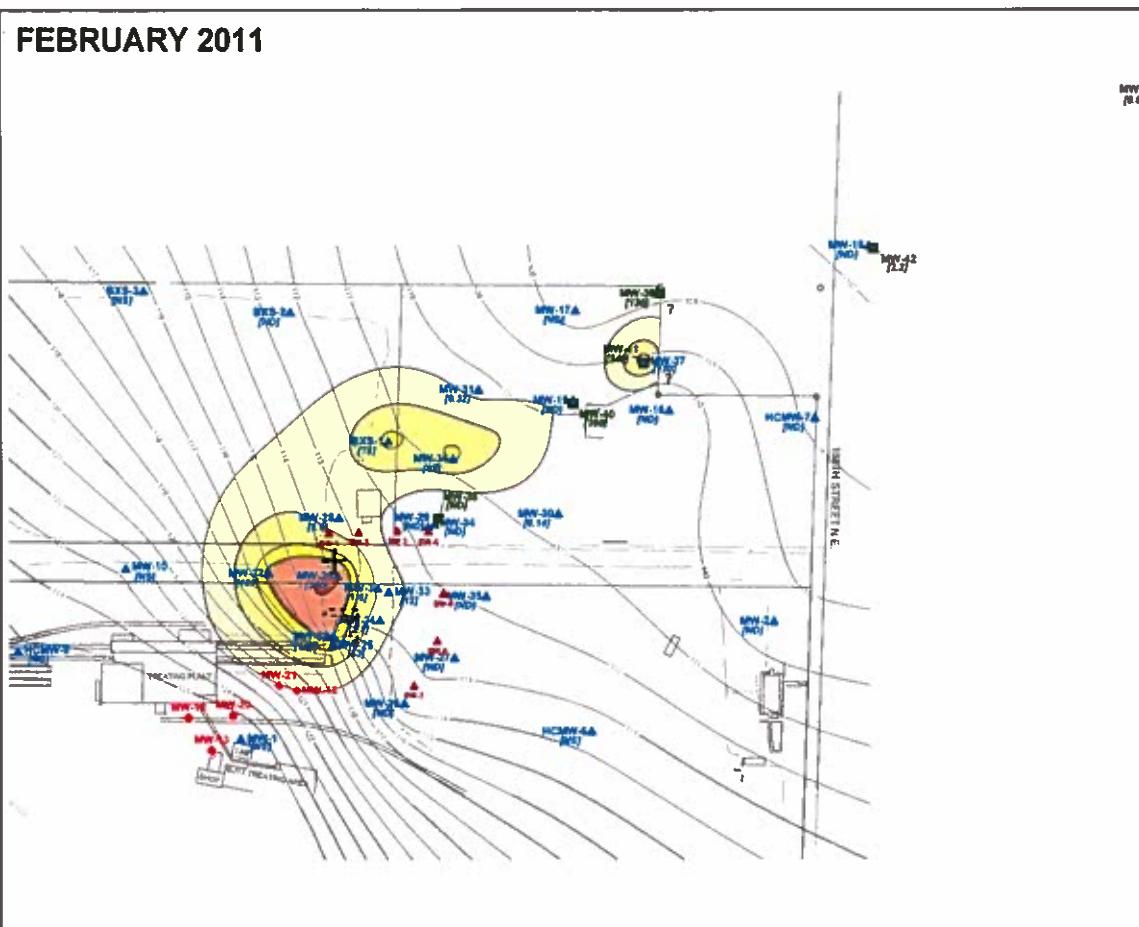
**PCP Plume Stability Data Summary**

February 2010	2.3 Acres
Plume Area:	28.1 ug/L
Plume Avg. Concentration:	1.6 Pounds
Plume Mass:	
May 2010	2.7 Acres
Plume Area:	28.9 ug/L
Plume Avg. Concentration:	1.9 Pounds
Plume Mass:	
August 2010	3.3 Acres
Plume Area:	30.7 ug/L
Plume Avg. Concentration:	2.5 Pounds
Plume Mass:	
November 2010	3.7 Acres
Plume Area:	35.4 ug/L
Plume Avg. Concentration:	3.2 Pounds
Plume Mass:	

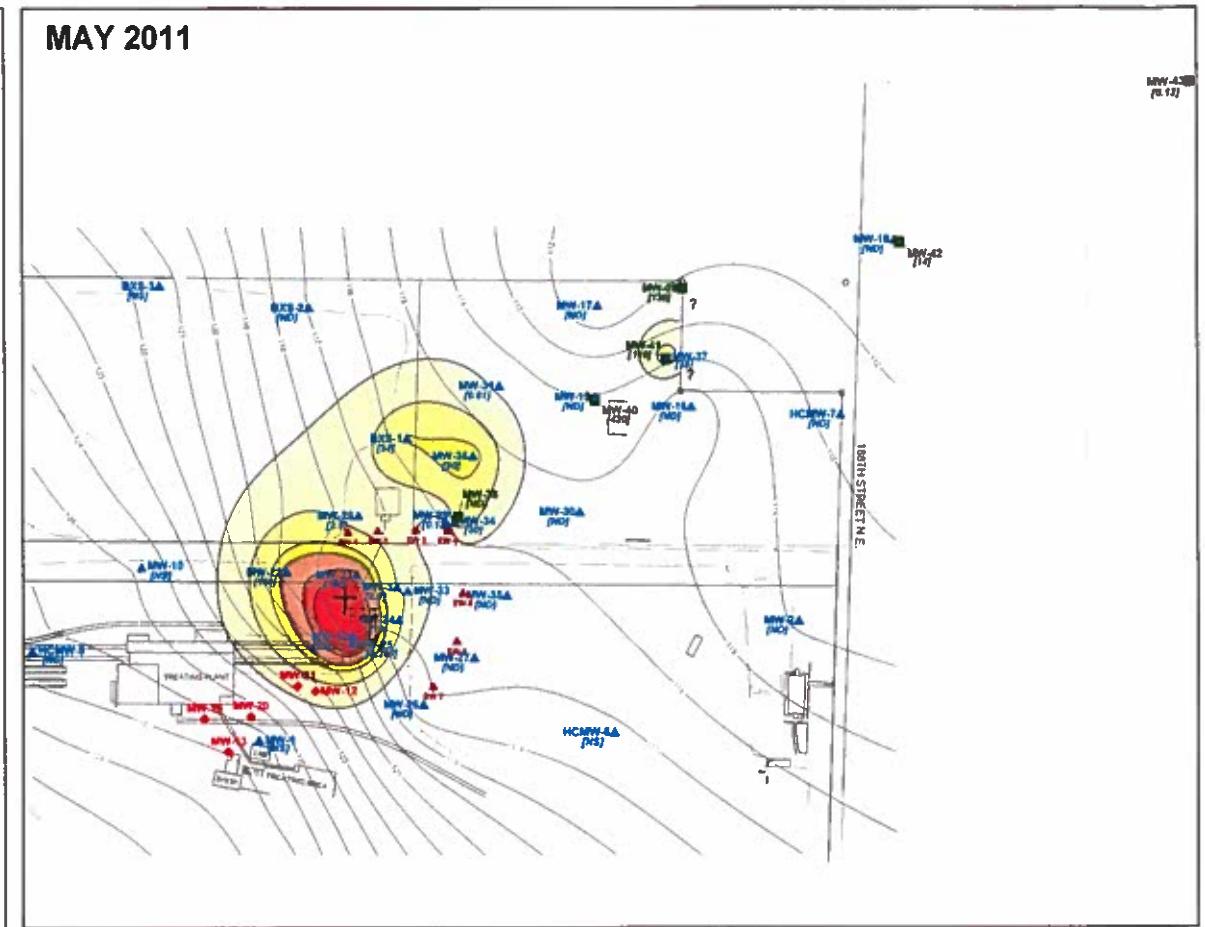
**MAP NOTES:**

Date: July 27, 2016  
Data Sources: Premier Environmental Services, Inc., Figures 16-19, 03/13/14

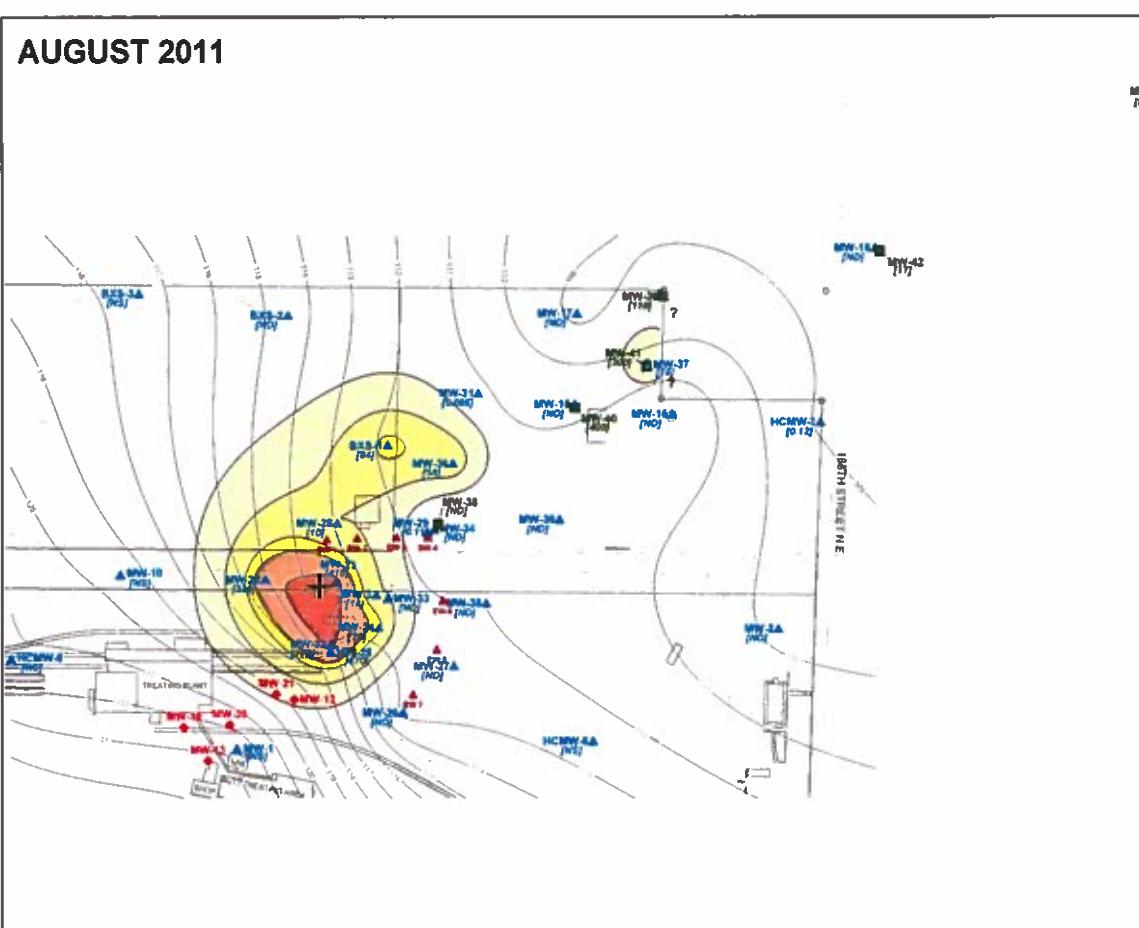
FEBRUARY 2011



MAY 2011



AUGUST 2011



NOVEMBER 2011

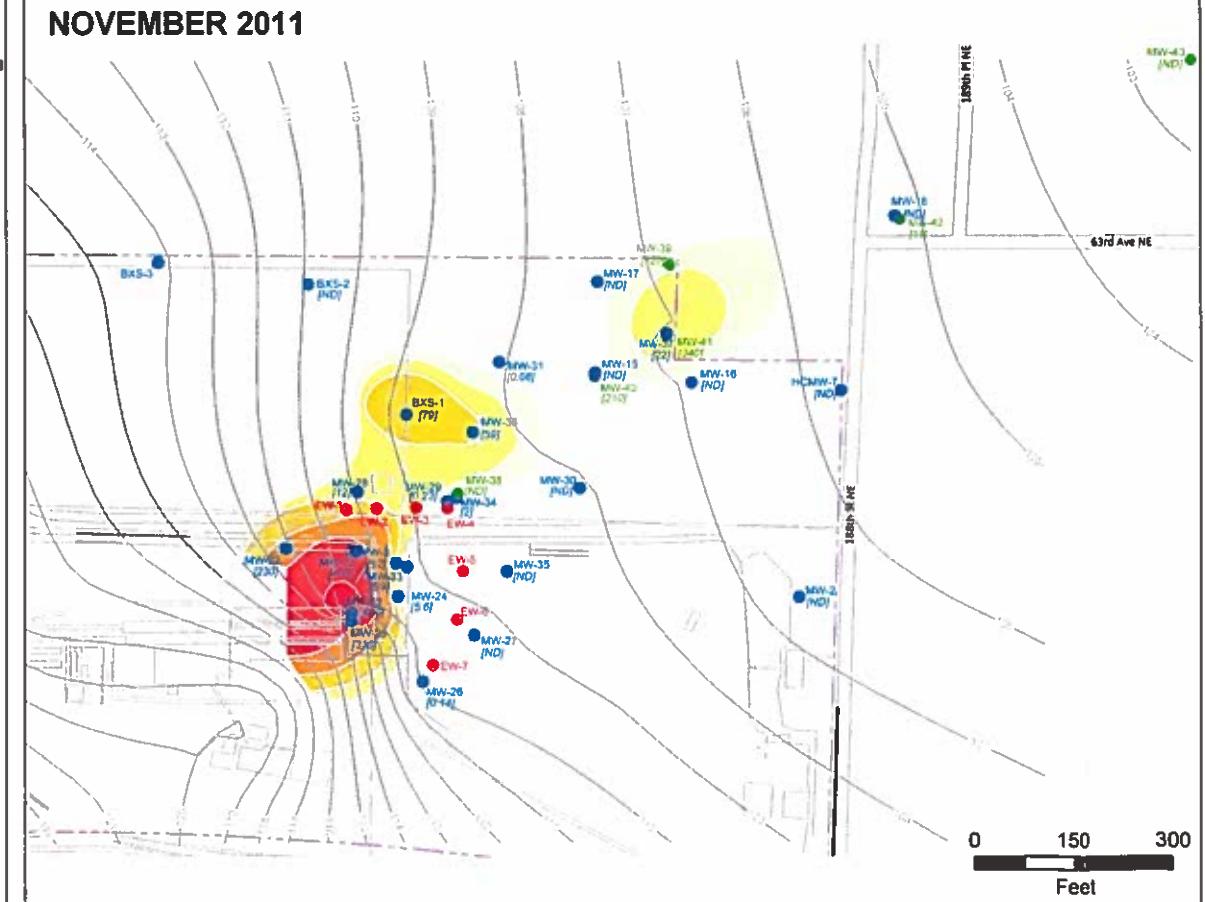


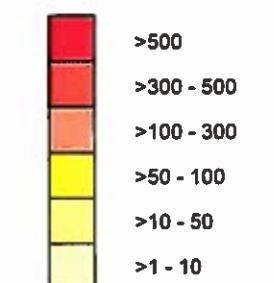
FIGURE 10

Pentachlorophenol Isopleth Map: 2011  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

#### LEGEND

- ▲ Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
- Deep Monitoring Well and PCP Concentration (ug/L)
- ◆ LNAPL Recovery Well
- △ Groundwater Extraction Well
- Infiltration Gallery
- ND Not-Detected
- NS Not Sampled
- + PCP Plume Center of Mass
- 107 - Groundwater Elevation Isopleth

#### Pentachlorophenol Concentration (ug/L)



#### PCP Plume Stability Data Summary

February 2011	Plume Area:	3.5 Acres
	Plume Avg. Concentration:	26.3 ug/L
	Plume Mass:	2.2 Pounds
May 2011	Plume Area:	3.6 Acres
	Plume Avg. Concentration:	70.1 ug/L
	Plume Mass:	6.2 Pounds
August 2011	Plume Area:	3.4 Acres
	Plume Avg. Concentration:	45.8 ug/L
	Plume Mass:	3.8 Pounds
November 2011	Plume Area:	Not Measured
	Plume Avg. Concentration:	Not Measured
	Plume Mass:	Not Measured

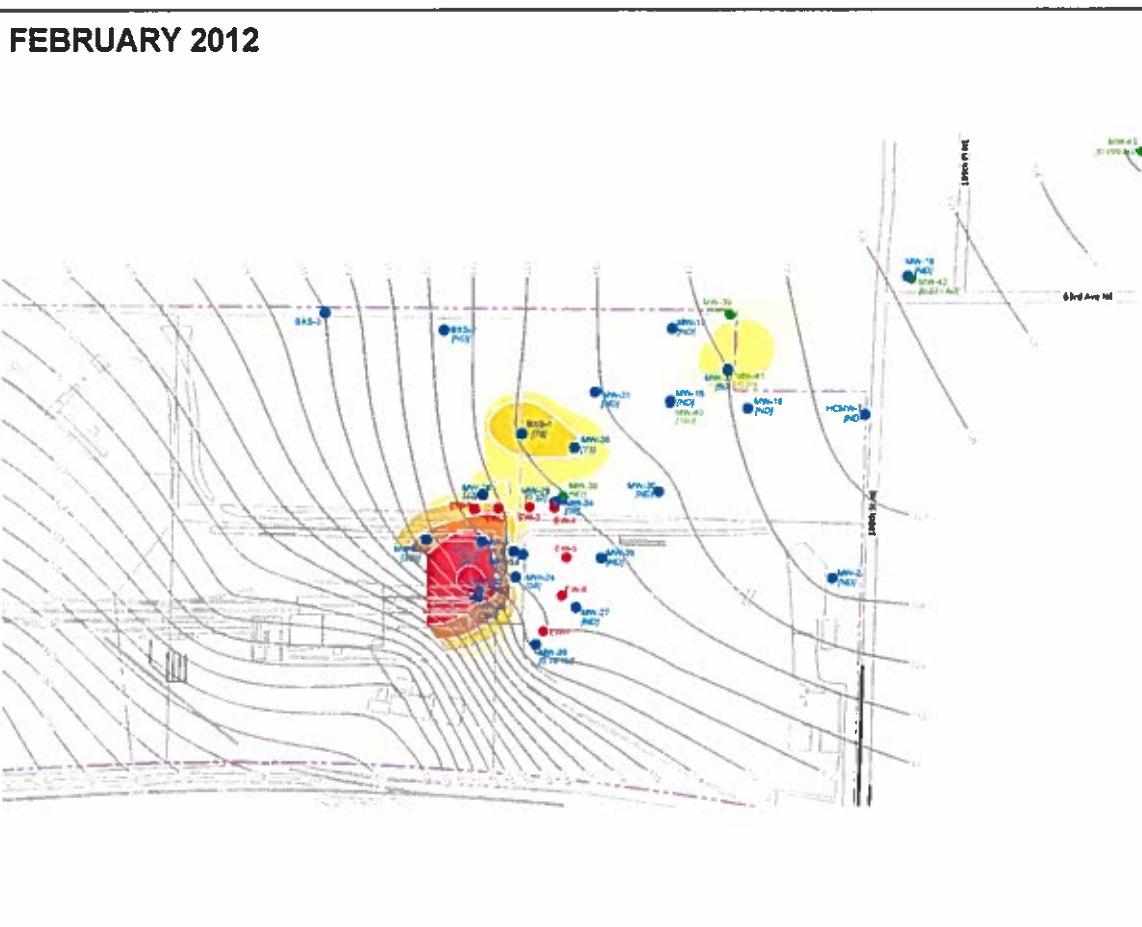


0 120 240 360  
Feet

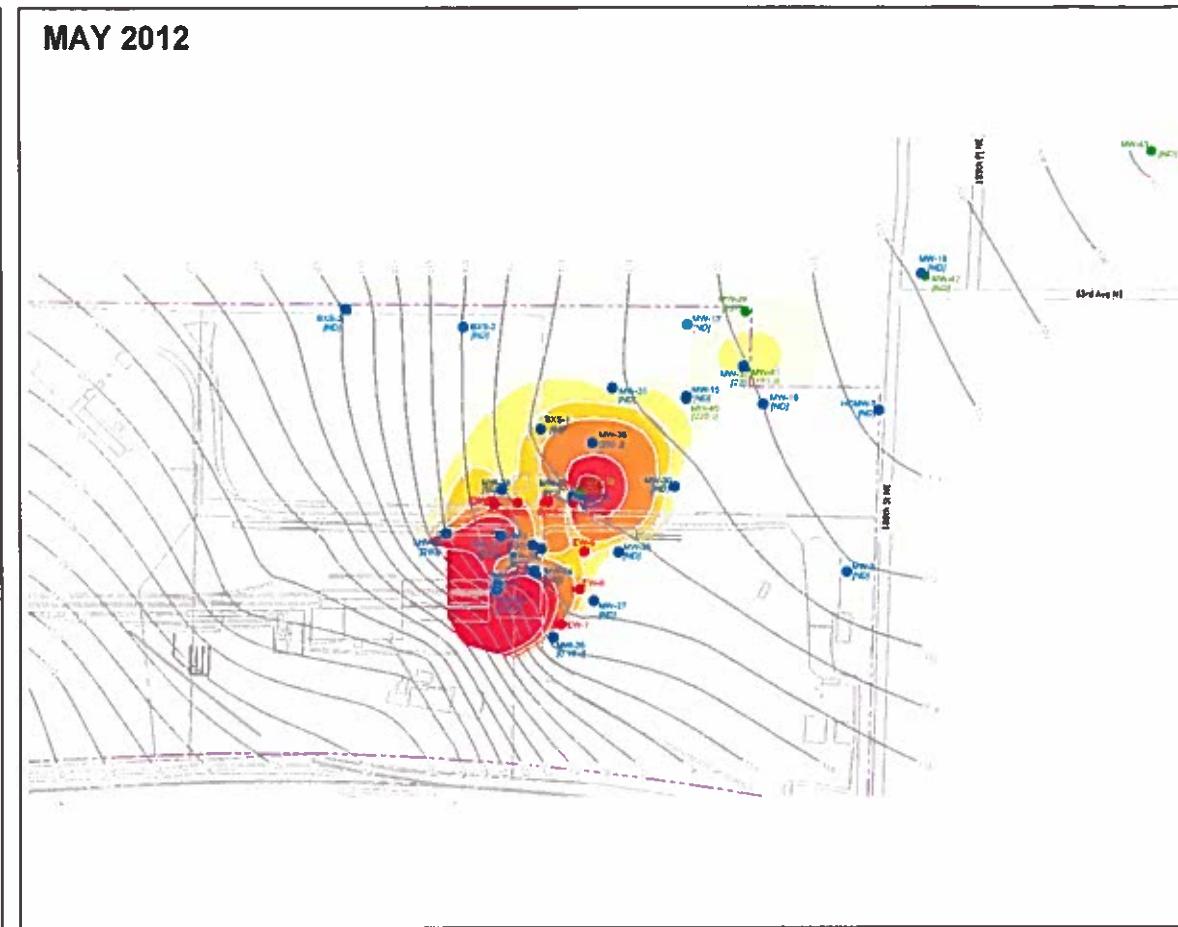
MAP NOTES:  
Date: July 27, 2016  
Data Sources: Premier Environmental Services, Inc., EarthCon, AMEC, Figures 20-23, 03/14



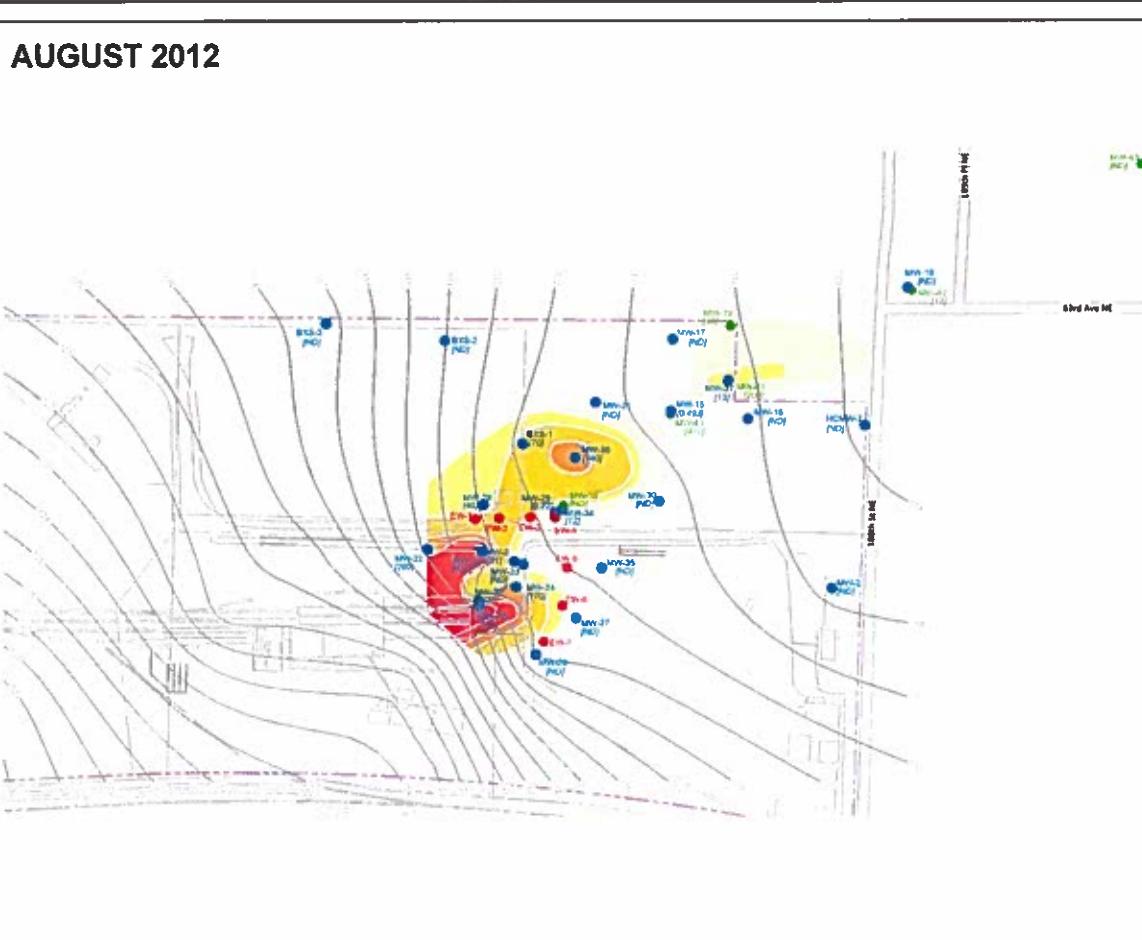
FEBRUARY 2012



MAY 2012



AUGUST 2012



NOVEMBER 2012

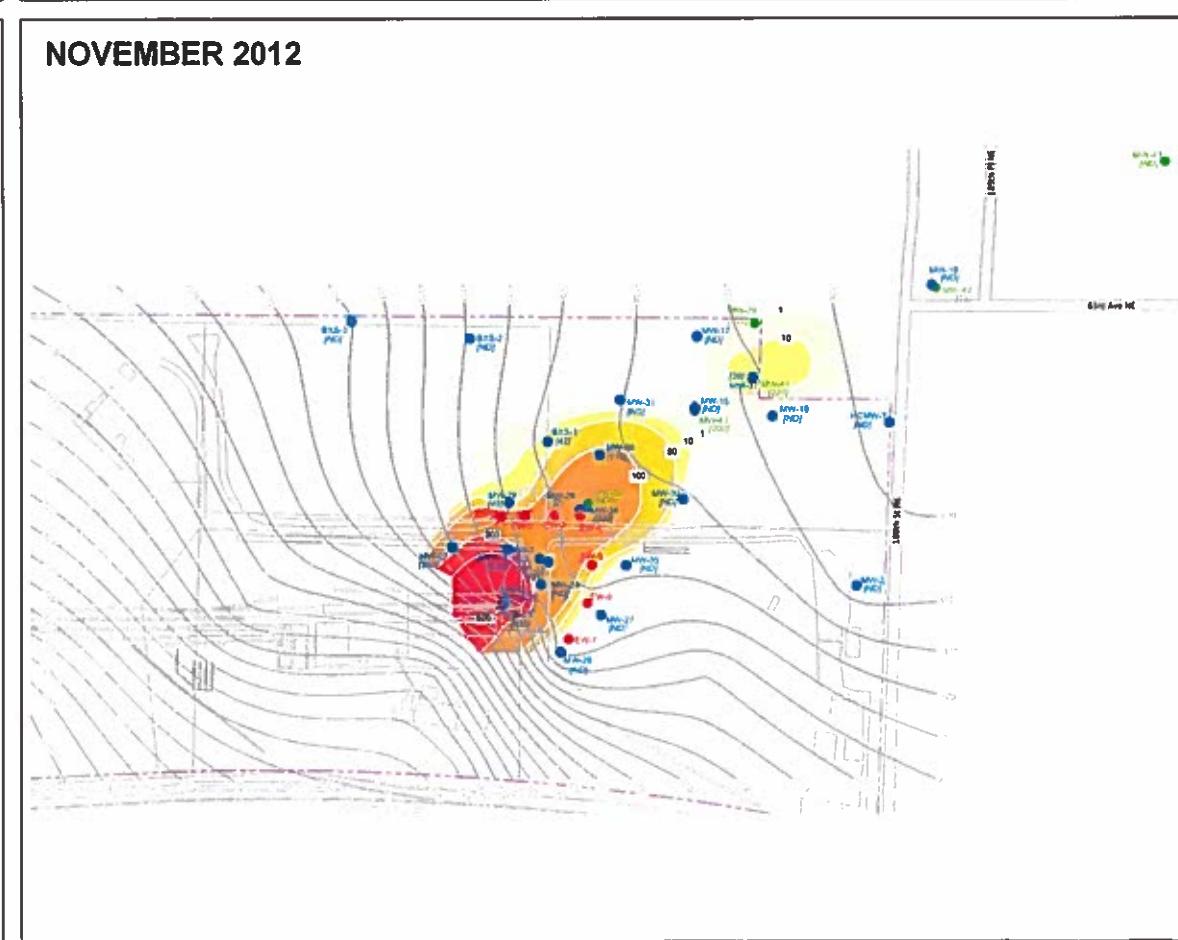


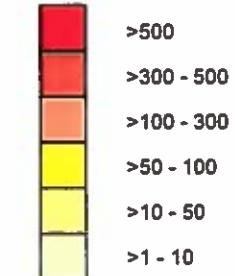
FIGURE 11

Pentachlorophenol Isopleth Map: 2012  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

LEGEND

- Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
- Deep Monitoring Well and PCP Concentration (ug/L)
- ◆ LNAPL Recovery Well
- Groundwater Extraction Well
- Infiltration Gallery
- ND Not-Detected
- NA Not Analyzed
- 107 - Groundwater Elevation Isopleth

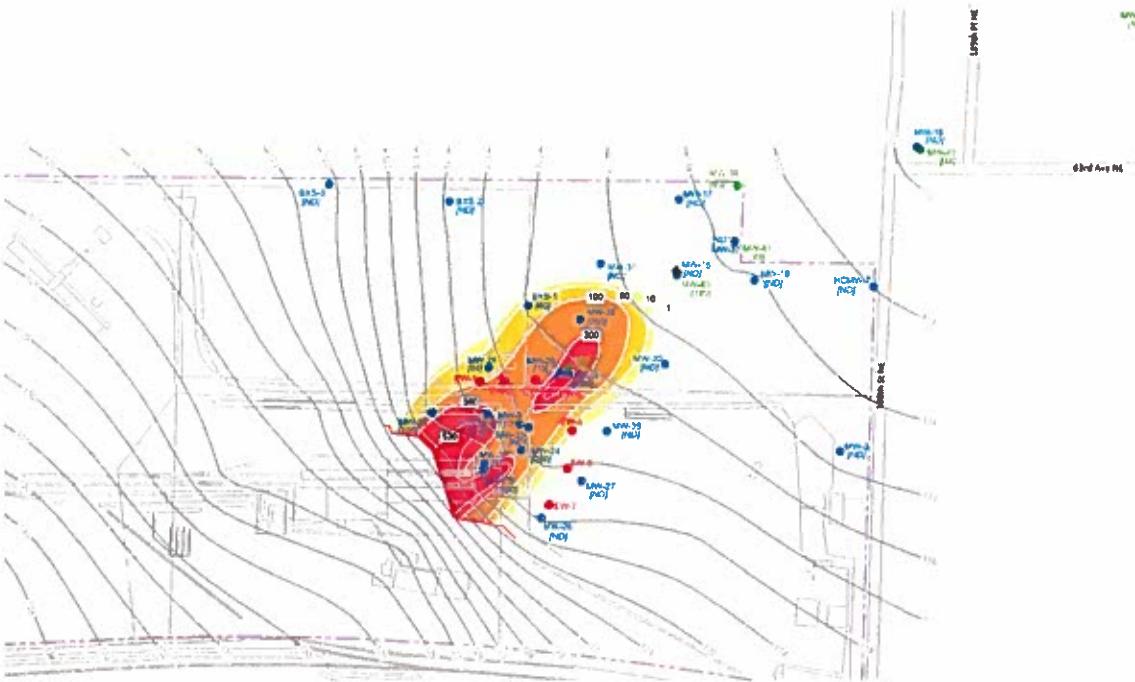
Pentachlorophenol Concentration (ug/L)



MAP NOTES:  
Date: July 27, 2016  
Data Sources: AMEC, Figures 24-27,  
March 2014



FEBRUARY 2013



JUNE 2013

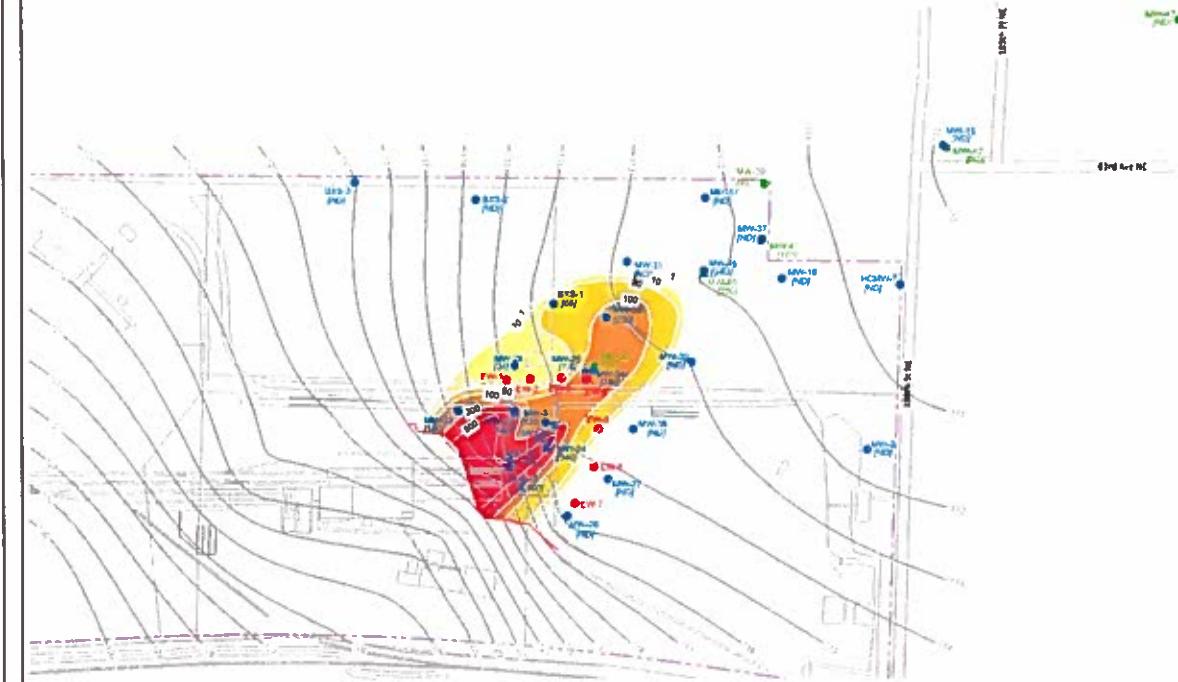
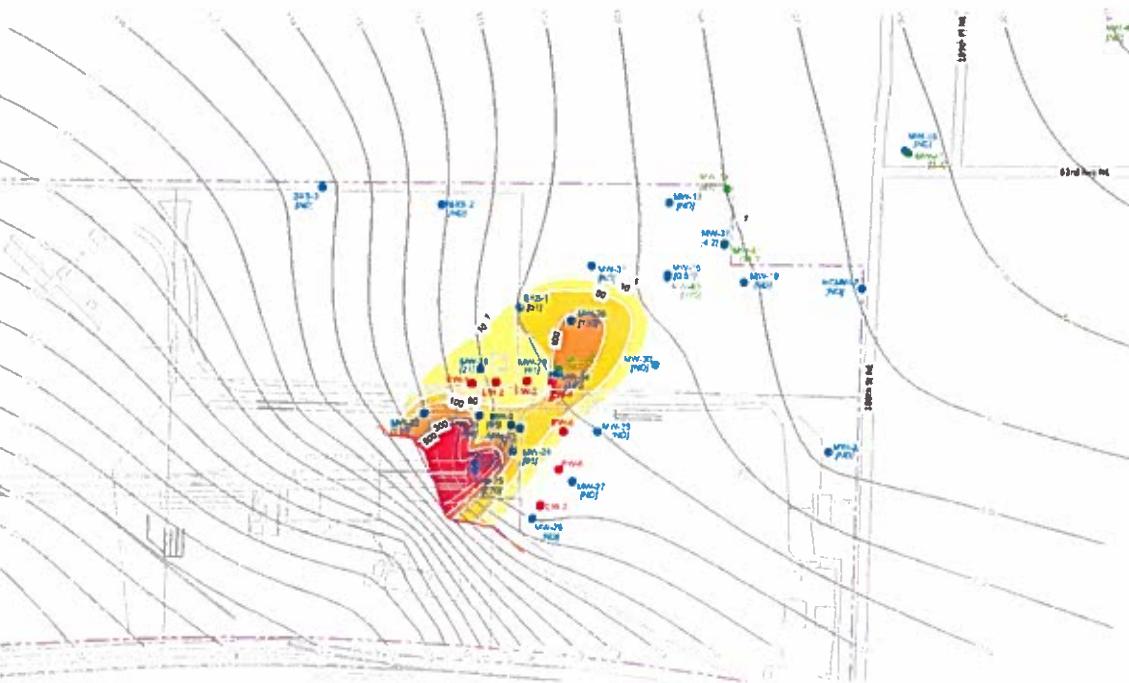


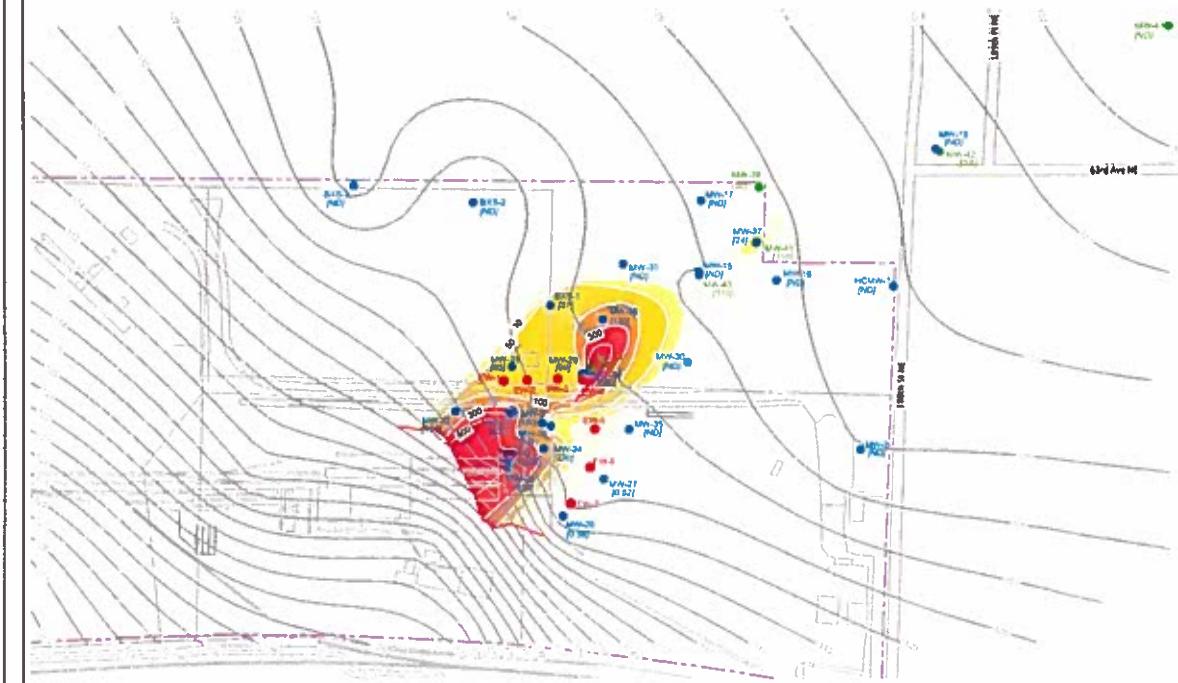
FIGURE 12

Pentachlorophenol Isopleth Map: 2013  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

AUGUST 2013



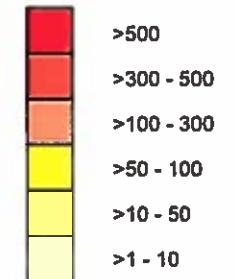
DECEMBER 2013



LEGEND

- Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
- Deep Monitoring Well and PCP Concentration (ug/L)
- ◆ LNAPL Recovery Well
- Groundwater Extraction Well
- Infiltration Gallery
- ND Not-Detected
- NA Not Analyzed
- 107 - Groundwater Elevation Isopleth

Pentachlorophenol Concentration (ug/L)

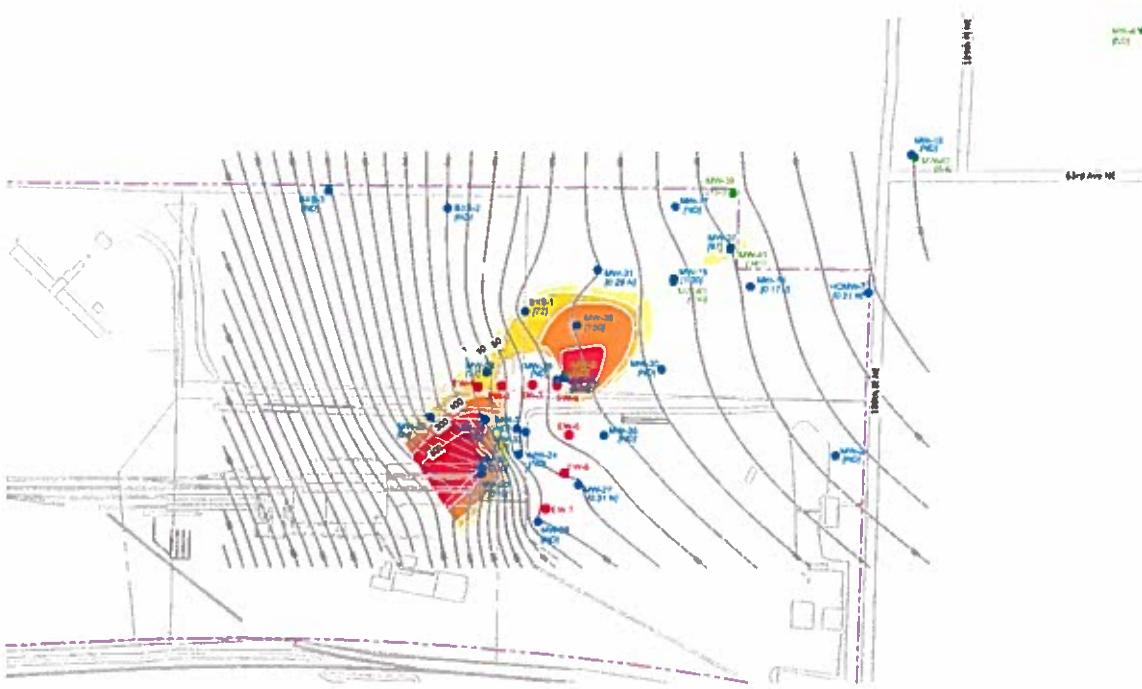


0 150 300 450  
Feet

MAP NOTES:  
Date: July 27, 2016  
Data Sources: AMEC, Figures 28-31,  
March 2014



MARCH 2014



JUNE 2014

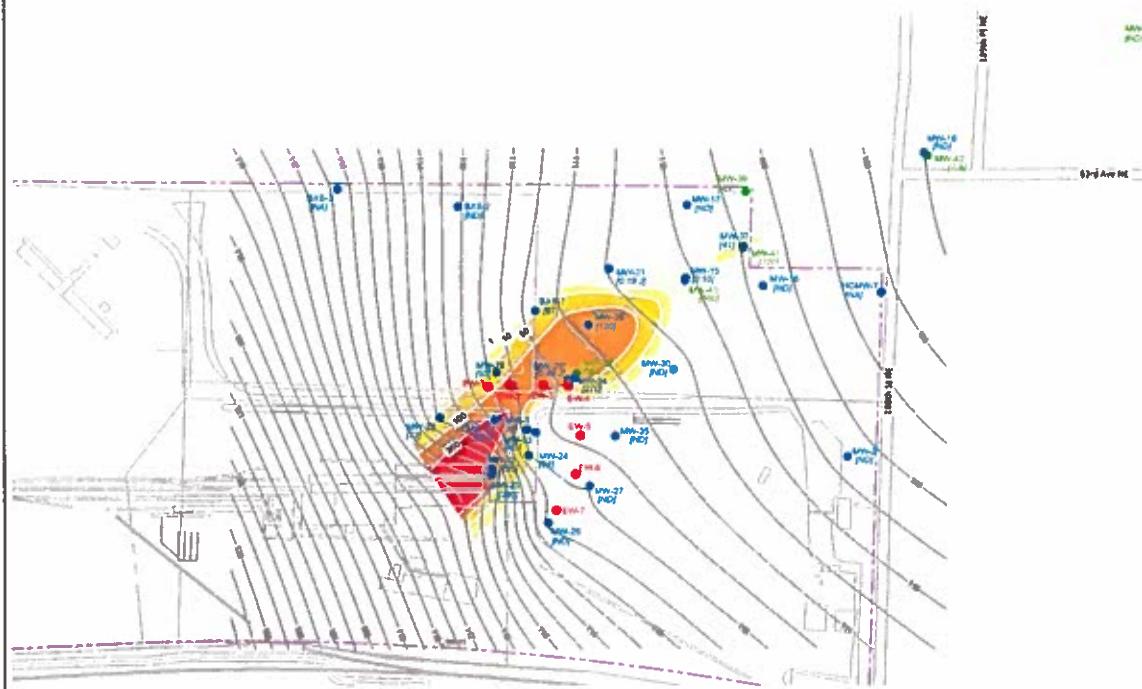


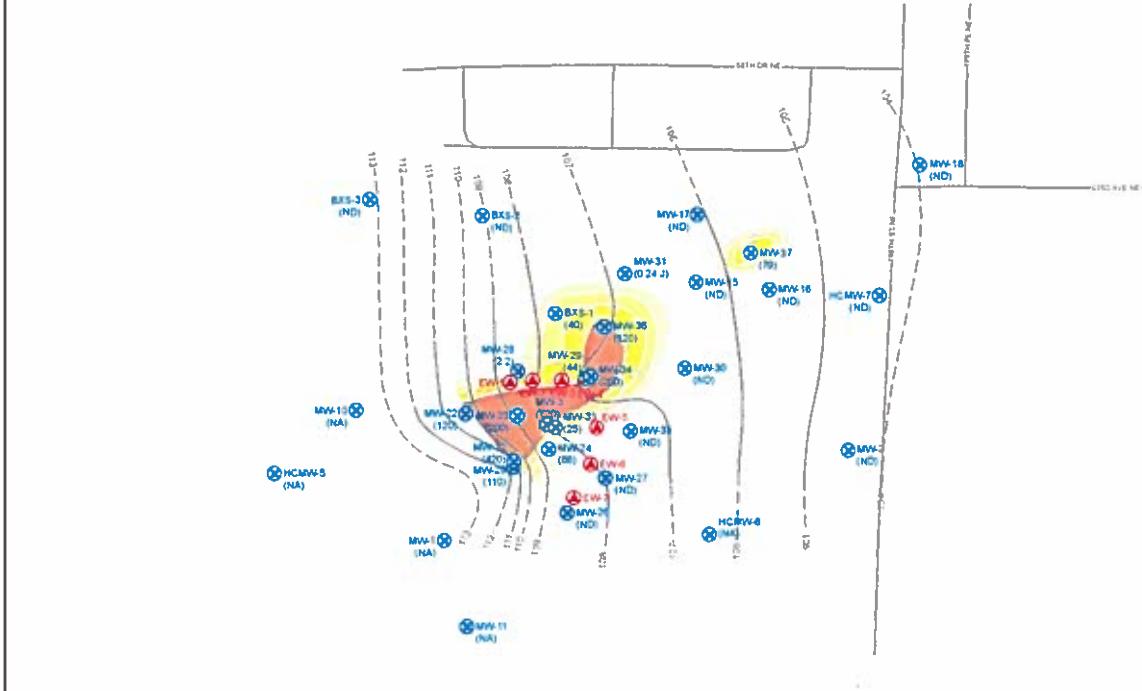
FIGURE 13

Pentachlorophenol Isopleth Map: 2014  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

SEPTEMBER 2014



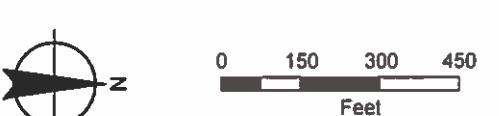
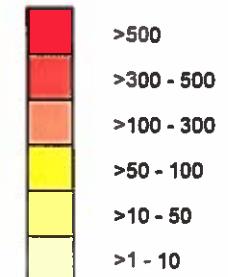
NOVEMBER 2014



LEGEND

- Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
- Deep Monitoring Well and PCP Concentration (ug/L)
- ◆ LNAPL Recovery Well
- ◎ Groundwater Extraction Well
- Infiltration Gallery
- ND Not-Detected
- NA Not Analyzed
- 107 Groundwater Elevation Isopleth

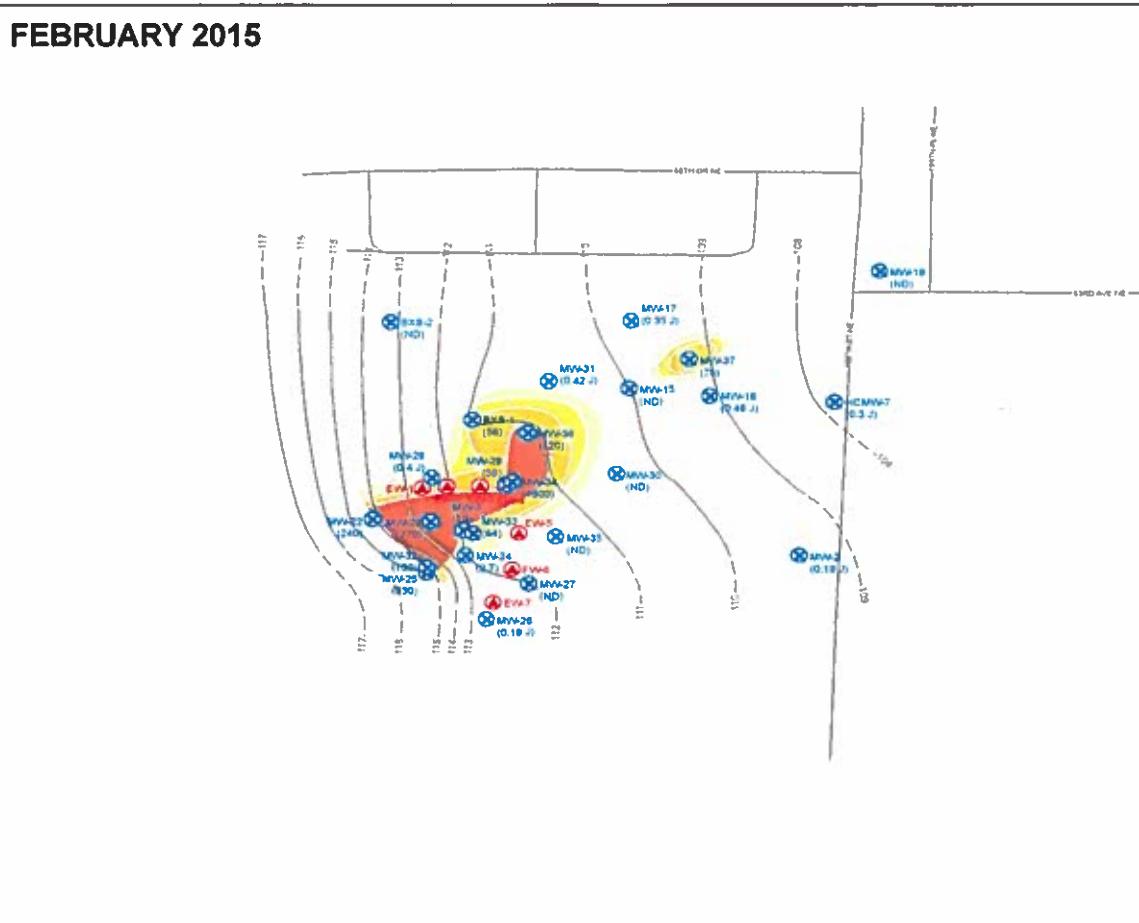
Pentachlorophenol Concentration (ug/L)



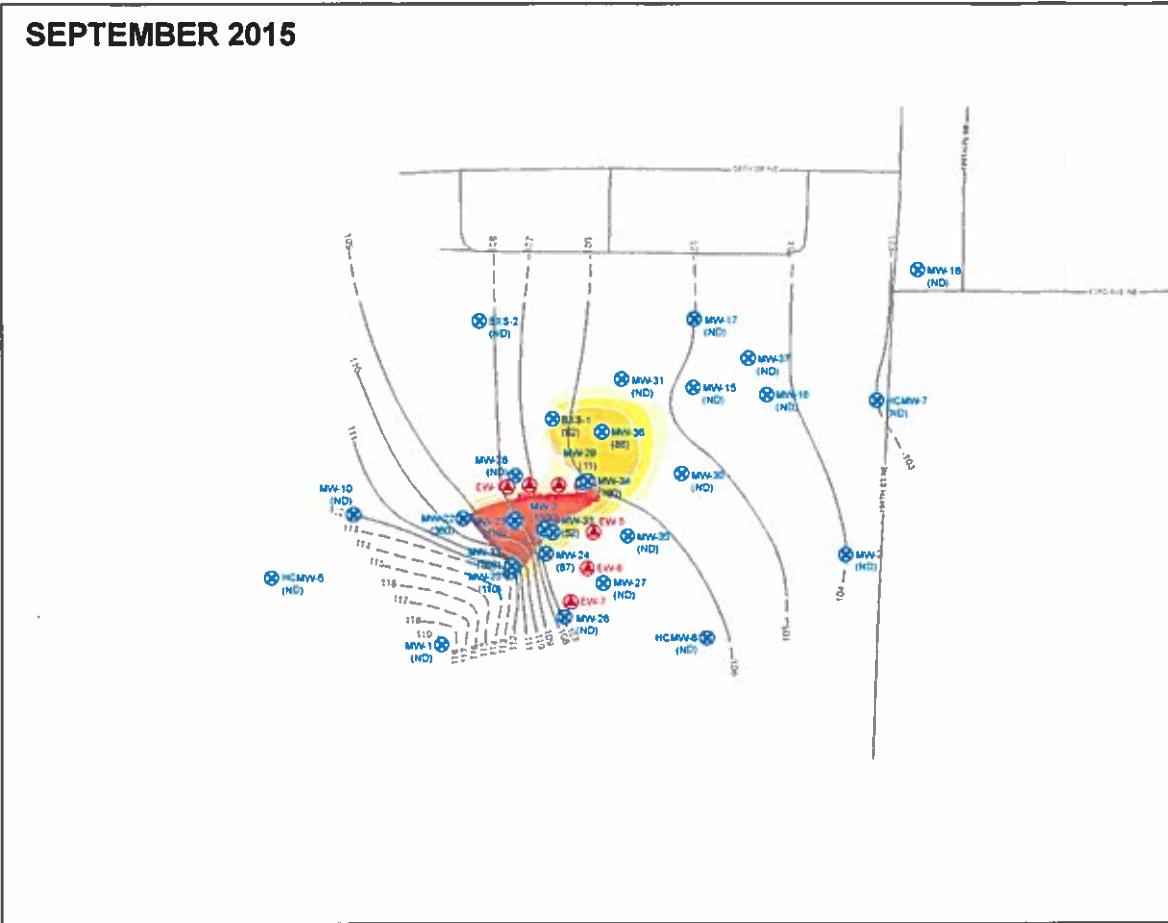
MAP NOTES:

Date: July 27, 2016  
Data Sources: AMEC, Figures 32-34.  
March 2014

FEBRUARY 2015



SEPTEMBER 2015



DECEMBER 2015

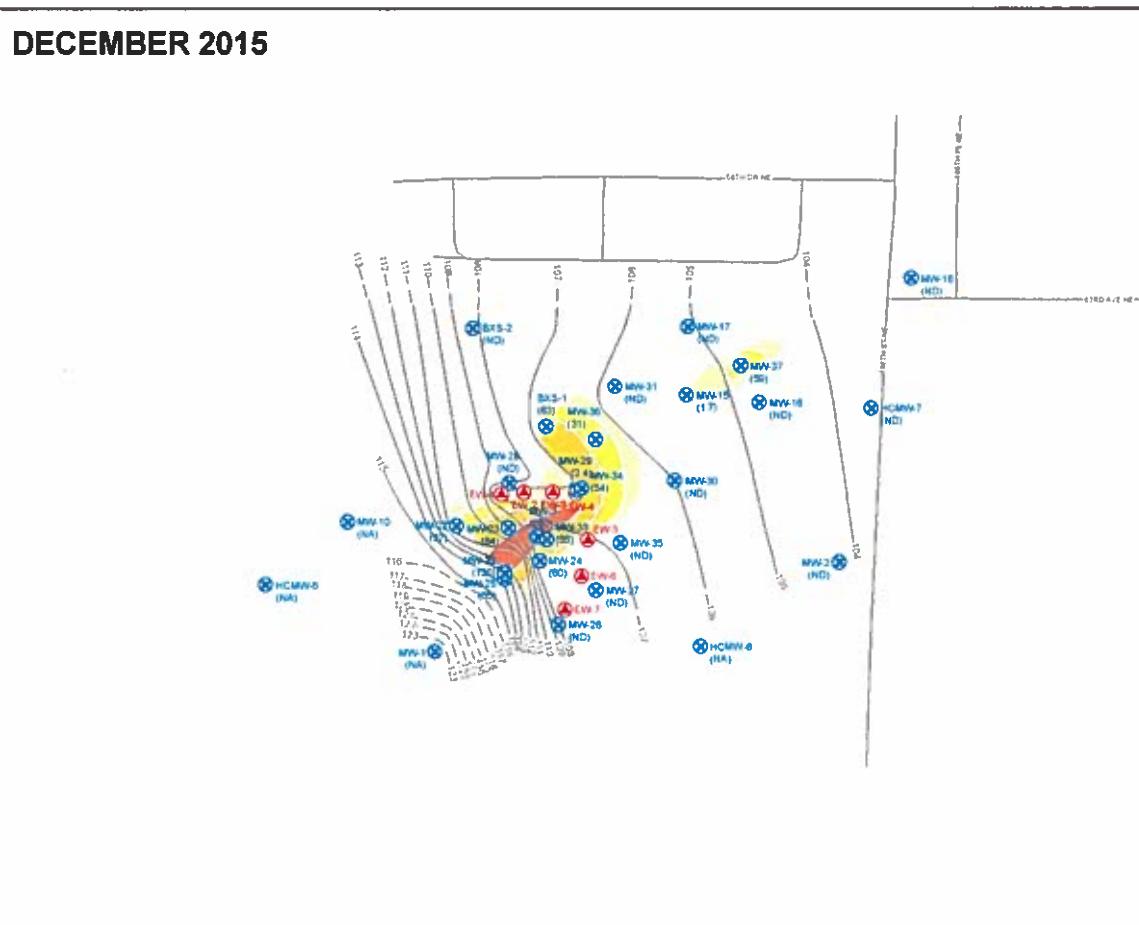


FIGURE 14

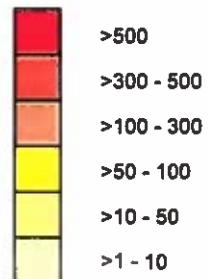
Pentachlorophenol Isopleth Map: 2015  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

LEGEND

- Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
- Deep Monitoring Well and PCP Concentration (ug/L)
- ◆ LNAPL Recovery Well
- Groundwater Extraction Well
- Infiltration Gallery
- ND Not-Detected
- NA Not Analyzed

- 107 — Groundwater Elevation Isopleth

Pentachlorophenol Concentration (ug/L)



NOTE:

The second quarter 2015 monitoring event was postponed, with EPA's approval, due to recirculation trench rehabilitation work conducted in July 2015.



0 150 300 450  
Feet



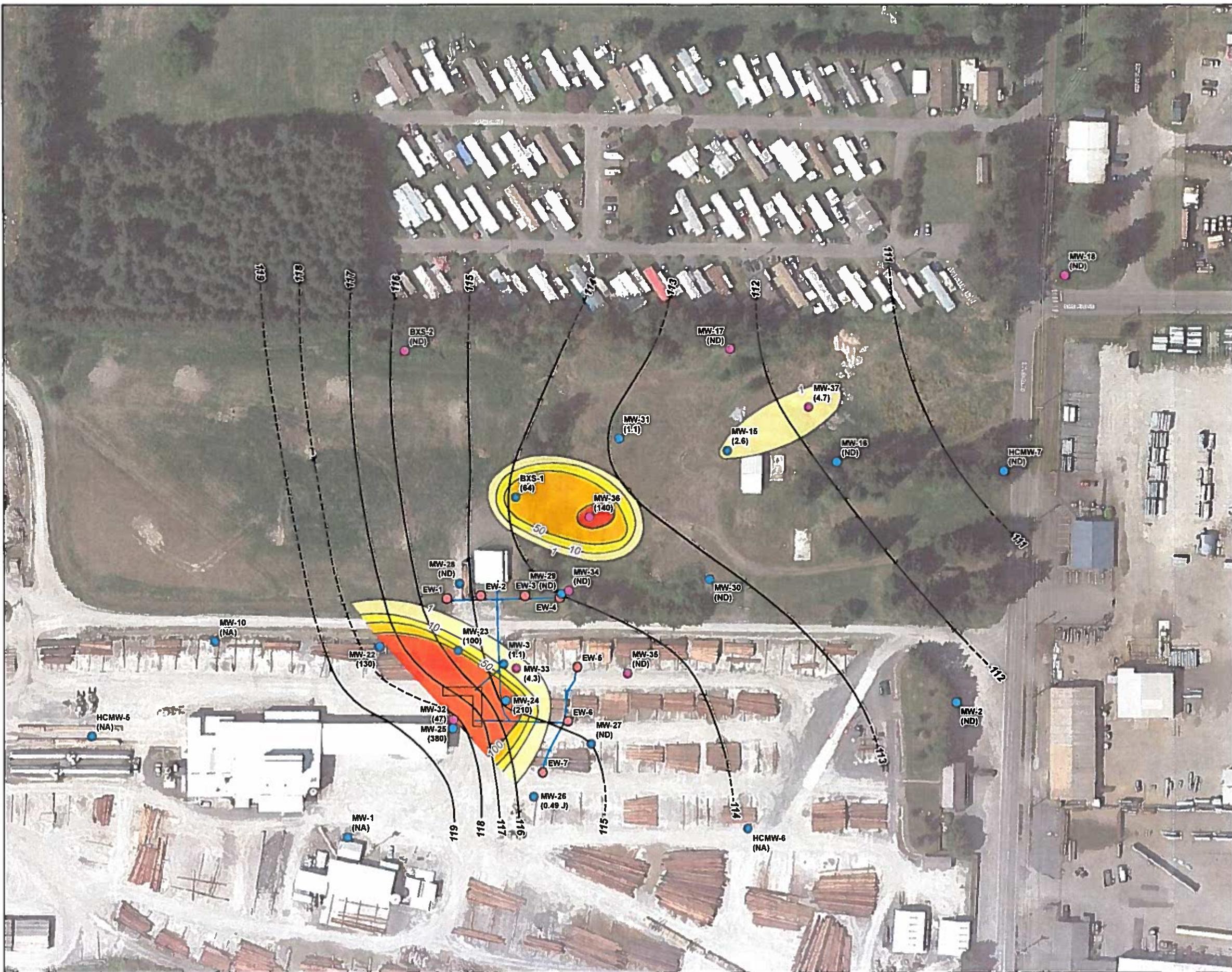
MAP NOTES:

Date: July 27, 2016  
Data Sources: AMEC, Figures 32-34,  
March 2014

FIGURE 15

Pentachlorophenol Isopleth Map:  
First Quarter 2016

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



LEGEND

- Shallow Monitoring Well and Pentachlorophenol (PCP) Concentration ( $\mu\text{g}/\text{L}$ ) February 2016
- Intermediate Monitoring Well and PCP Concentration ( $\mu\text{g}/\text{L}$ ) February 2016

Pentachlorophenol Concentrations ( $\mu\text{g}/\text{L}$ )

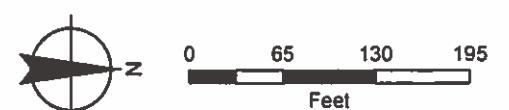
- >100
- >50 - 100
- >10 - 50
- >1 - 10

All Other Features

- Extraction Well
- Infiltration Gallery Piping
- Infiltration Trench
- Groundwater Elevation Contours (dashed where inferred)

NOTES:

- Results in  $\mu\text{g}/\text{L}$ .
- All elevations exist in the North American Vertical Datum of 1988.
- Abbreviations:
  - NA Not Analyzed
  - ND Not Detected



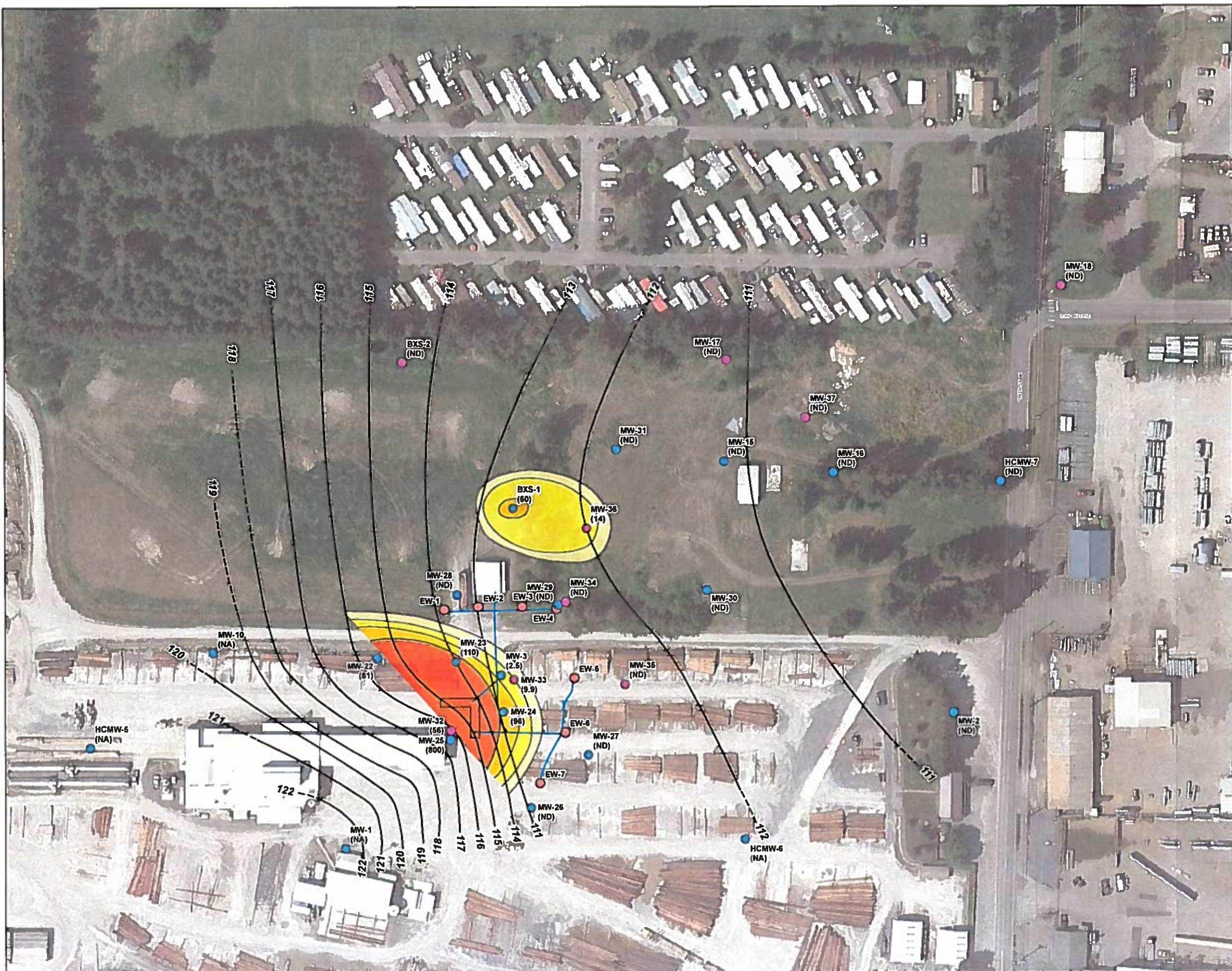
MAP NOTES:

Date July 27, 2016  
Data Sources: AMEC, ESRI, Air photo taken on May 2 2015 by Google Earth

FIGURE 16

Pentachlorophenol Isopleth Map:  
Second Quarter 2016

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



LEGEND

- Shallow Monitoring Well and Pentachlorophenol (PCP) Concentration (µg/L) June 2016
- Intermediate Monitoring Well and PCP Concentration (µg/L) June 2016

Pentachlorophenol Concentrations (µg/L)

>100

>50 - 100

>10 - 50

>1 - 10

All Other Features

Extraction Well

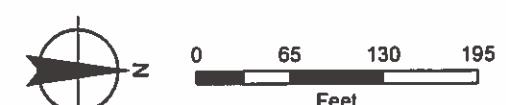
Infiltration Gallery Piping

Infiltration Trench

Groundwater Elevation Contours (dashed where inferred)

NOTES:

- Results in µg/L.
- All elevations exist in the North American Vertical Datum of 1988.
- Abbreviations:
  - NA Not Analyzed
  - ND Not Detected

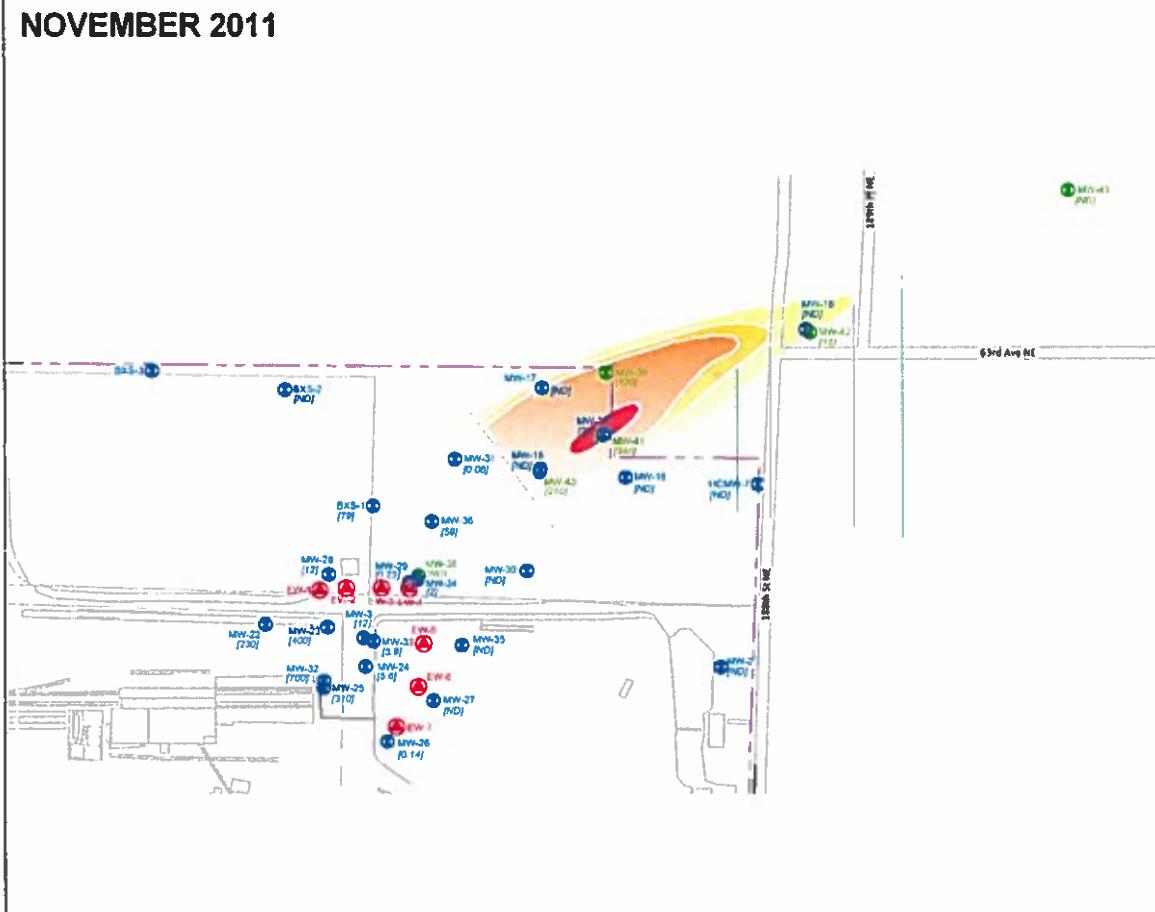


MAP NOTES:

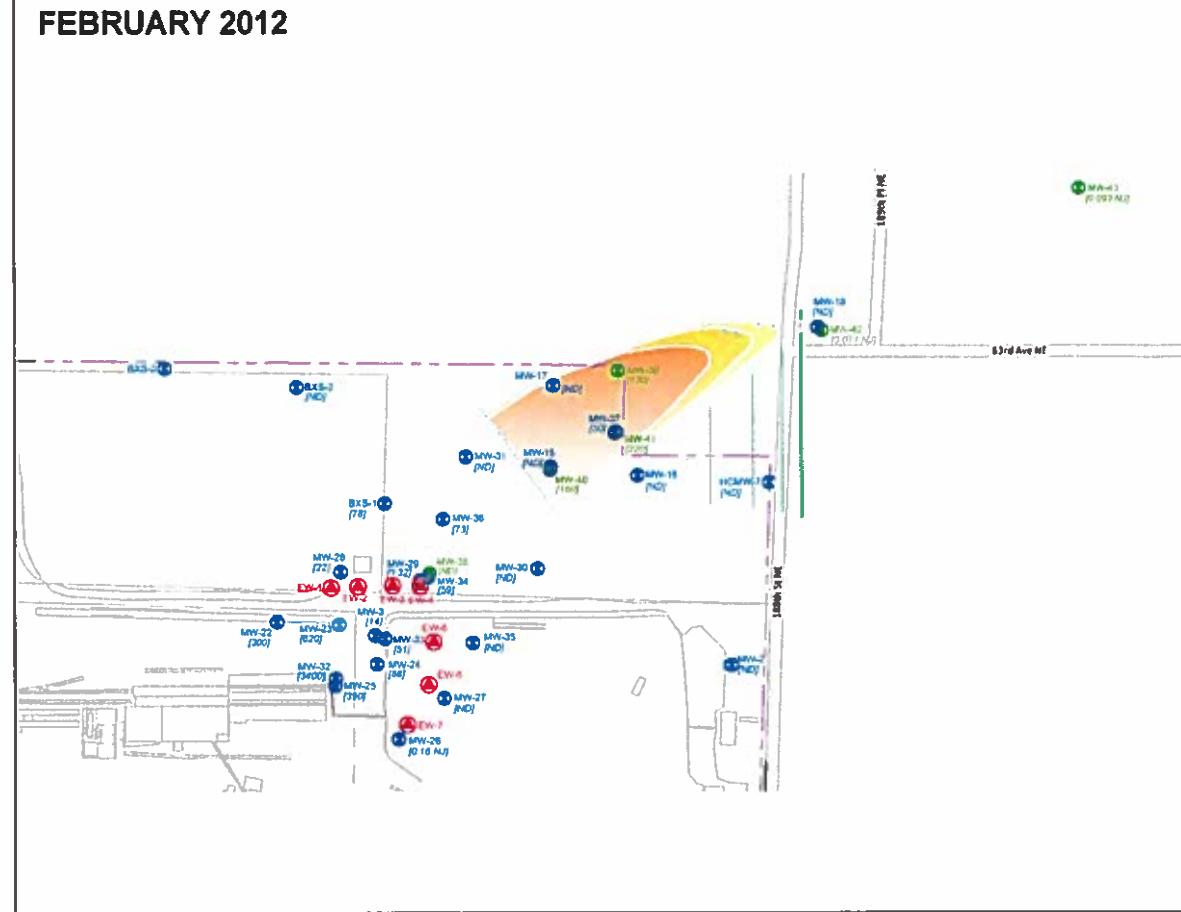
Date: April 8, 2016

Data Sources: AMEC, ESRI, Air photo taken on May 2, 2015 by Google Earth

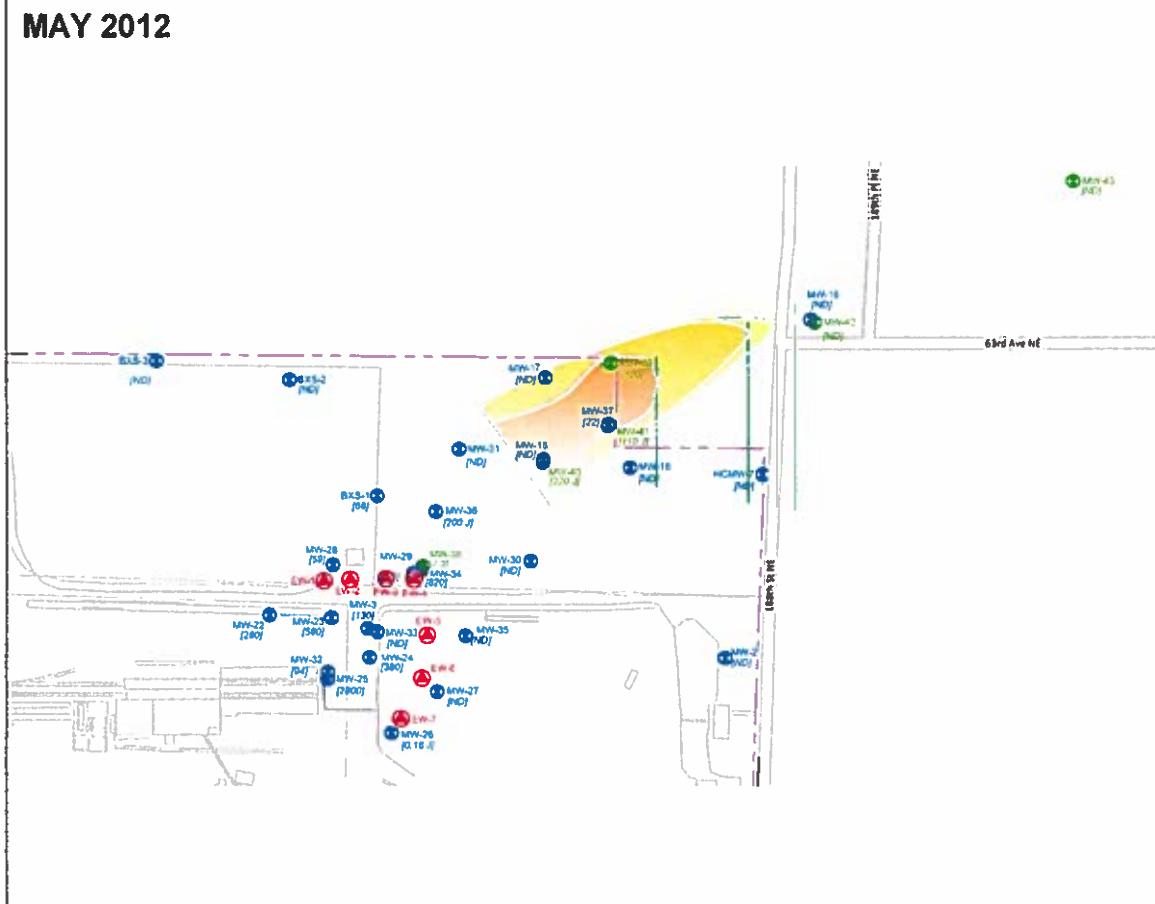
NOVEMBER 2011



FEBRUARY 2012



MAY 2012



AUGUST 2012

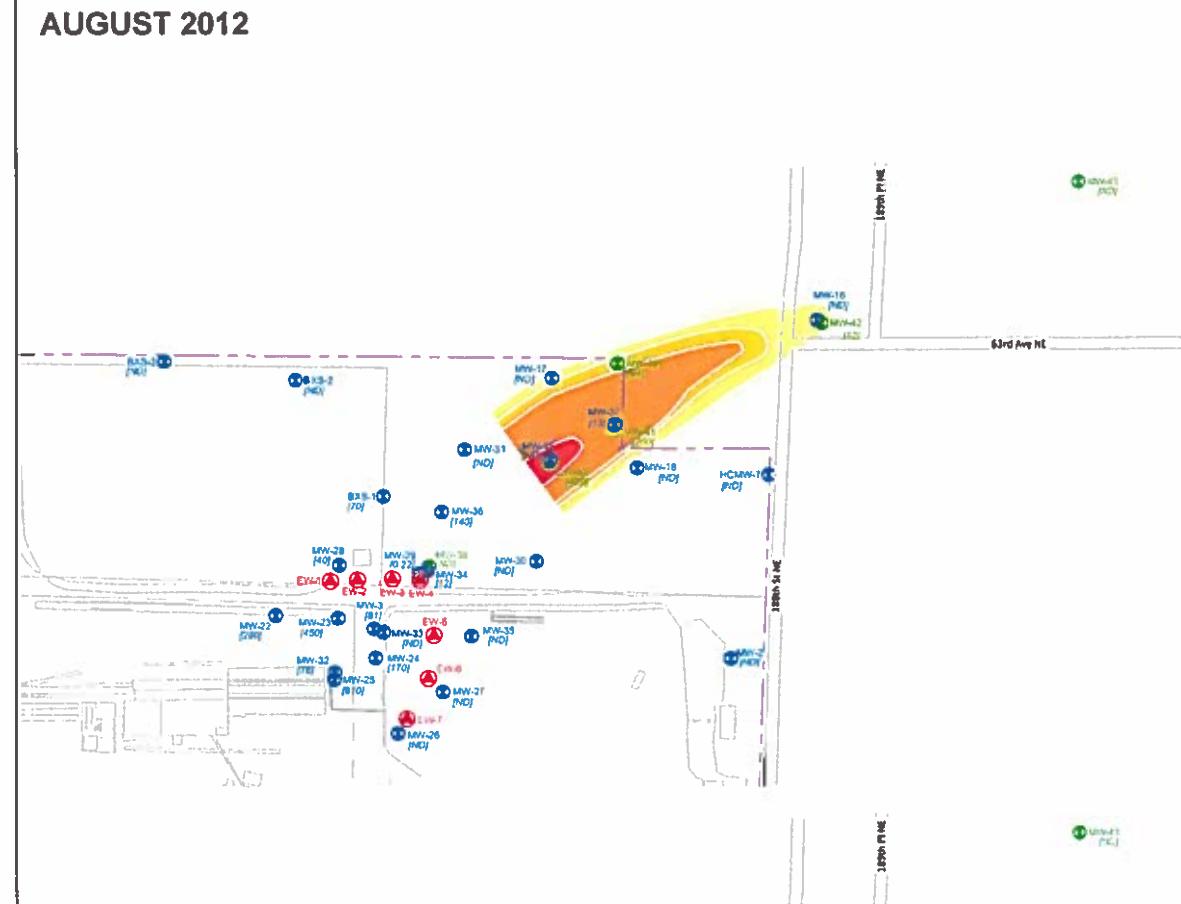


FIGURE 17

Pentachlorophenol Isopleth Map, Deep Zone:  
Fourth Quarter 2011 - Third Quarter 2012

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

#### LEGEND

- Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
- Deep Monitoring Well and PCP Concentration (ug/L)
- Groundwater Extraction Well
- Site Boundary
- ND Not-Detected
- NA Not Analyzed

#### Pentachlorophenol Concentration (ug/L)

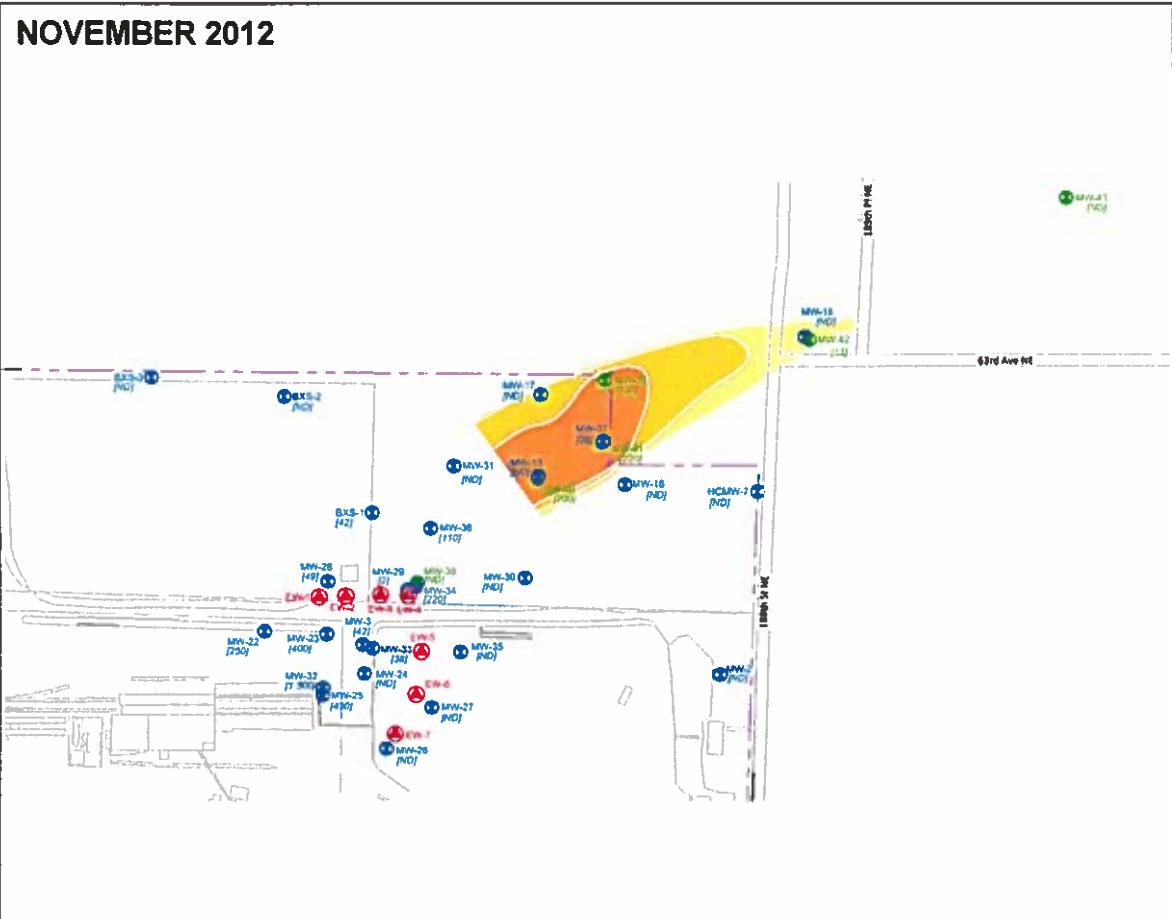
>500
>300 - 500
>100 - 300
>50 - 100
>10 - 50
>1 - 10



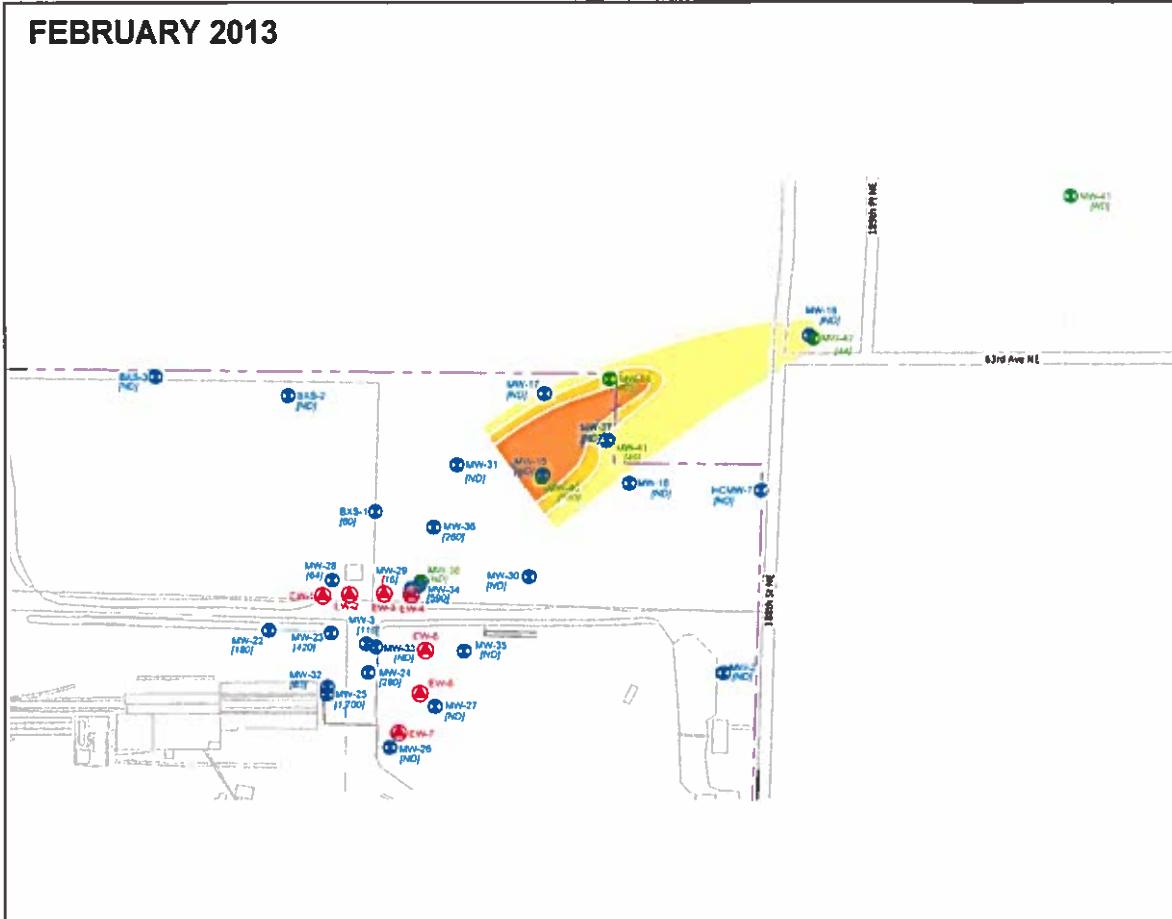
MAP NOTES:  
Date: July 27, 2016  
Data Sources: AMEC, Figures 35 + 36,  
August 2014



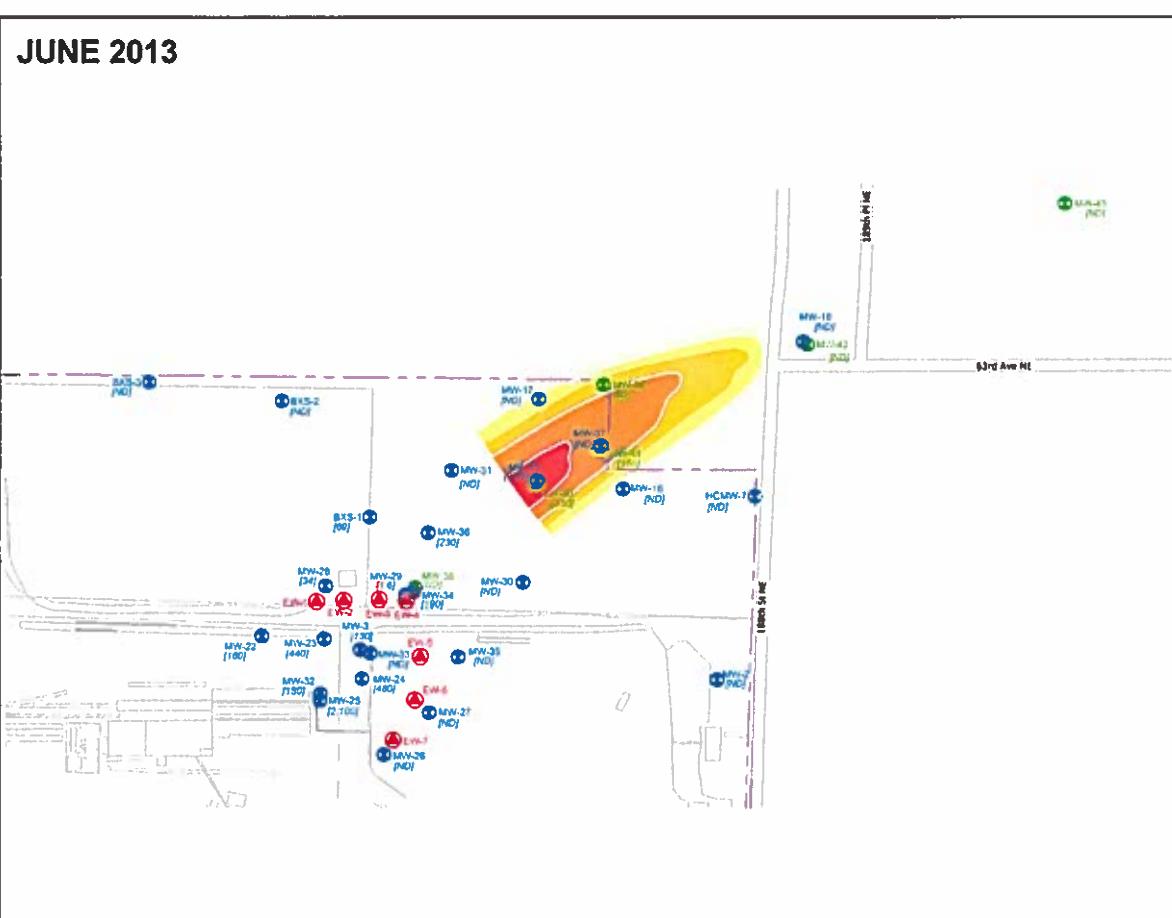
NOVEMBER 2012



FEBRUARY 2013



JUNE 2013



AUGUST 2013

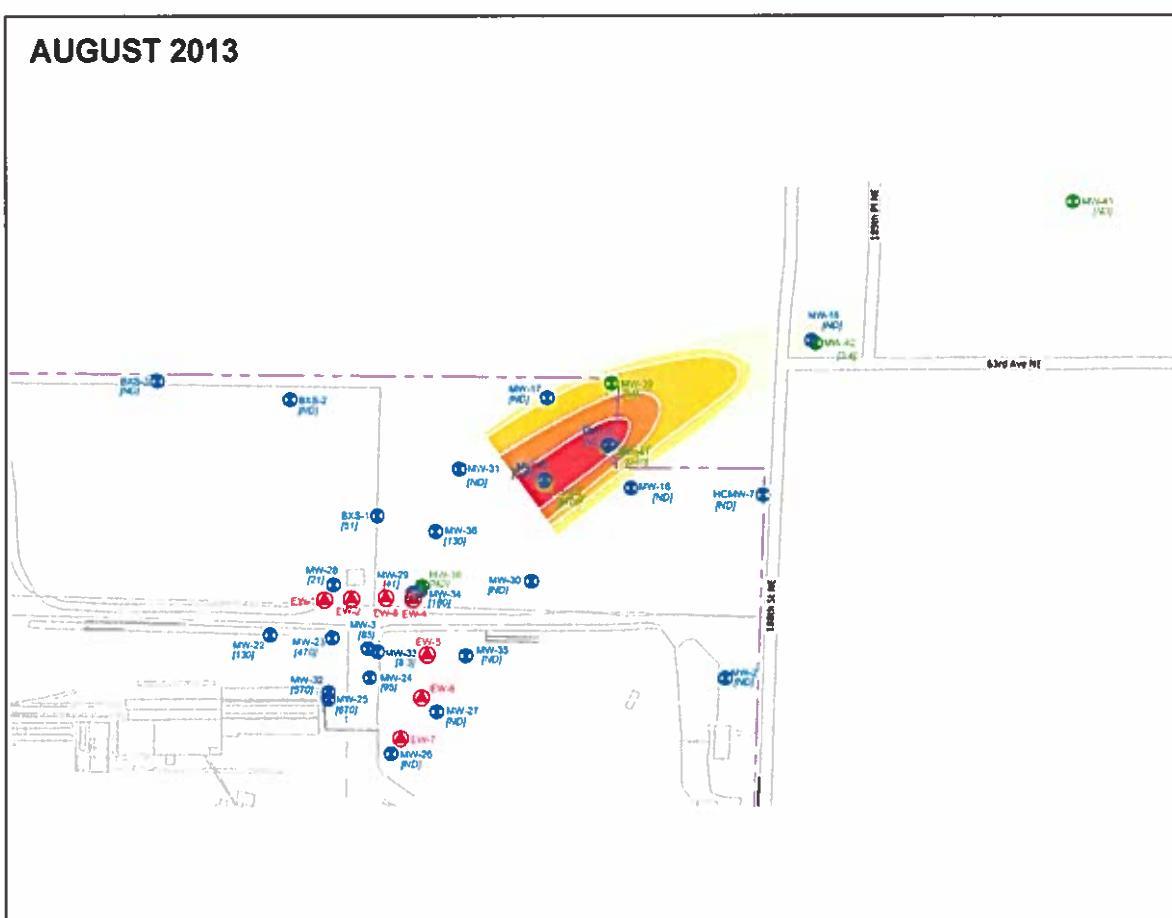


FIGURE 18

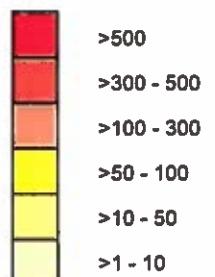
Pentachlorophenol Isopleth Map, Deep Zone:  
Fourth Quarter 2012 - Third Quarter 2013

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

LEGEND

- Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
- Deep Monitoring Well and PCP Concentration (ug/L)
- Groundwater Extraction Well
- Site Boundary
- ND Not-Detected
- NA Not Analyzed

Pentachlorophenol Concentration (ug/L)



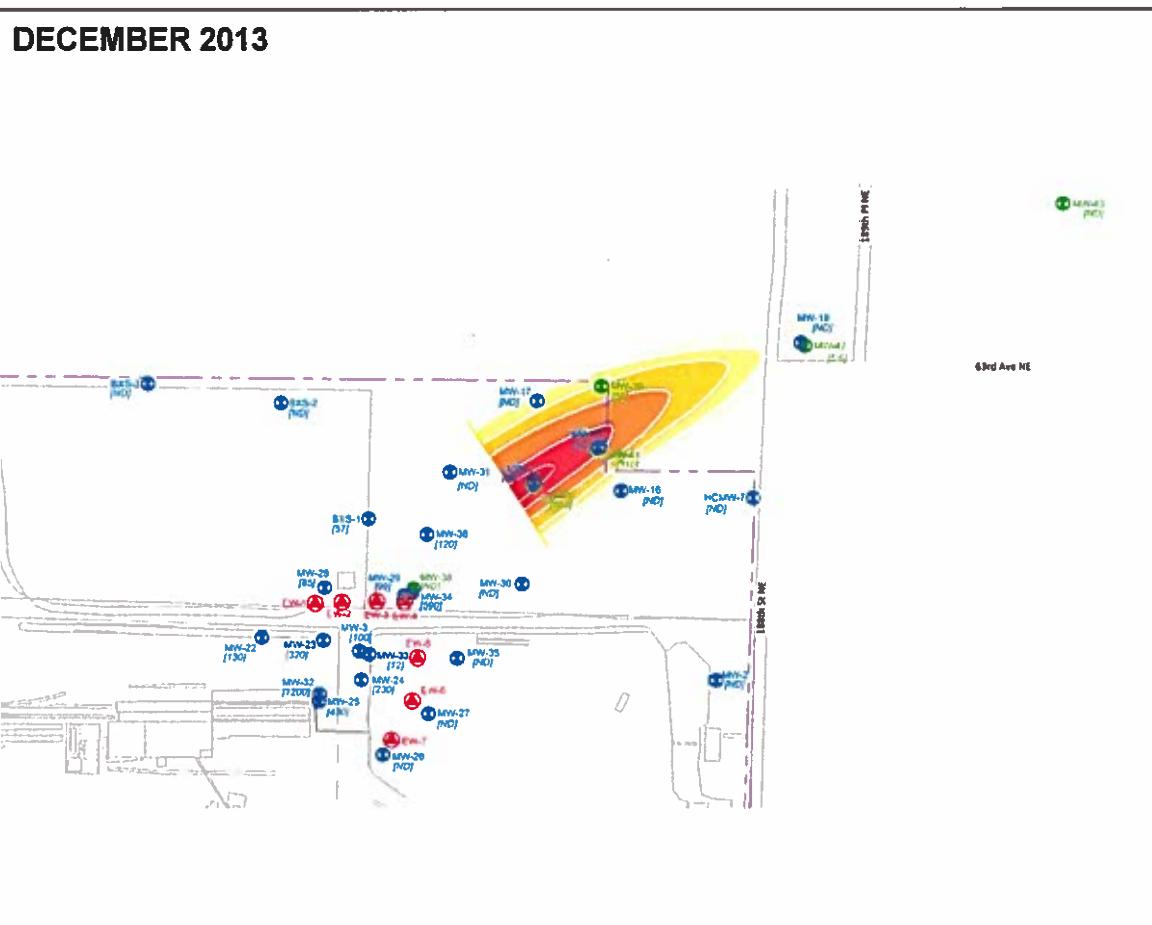
0 175 250 325  
Feet



MAP NOTES:

Date: July 27, 2016  
Data Sources: AMEC, Figure 36 + 37, August 2014

DECEMBER 2013



MARCH 2014

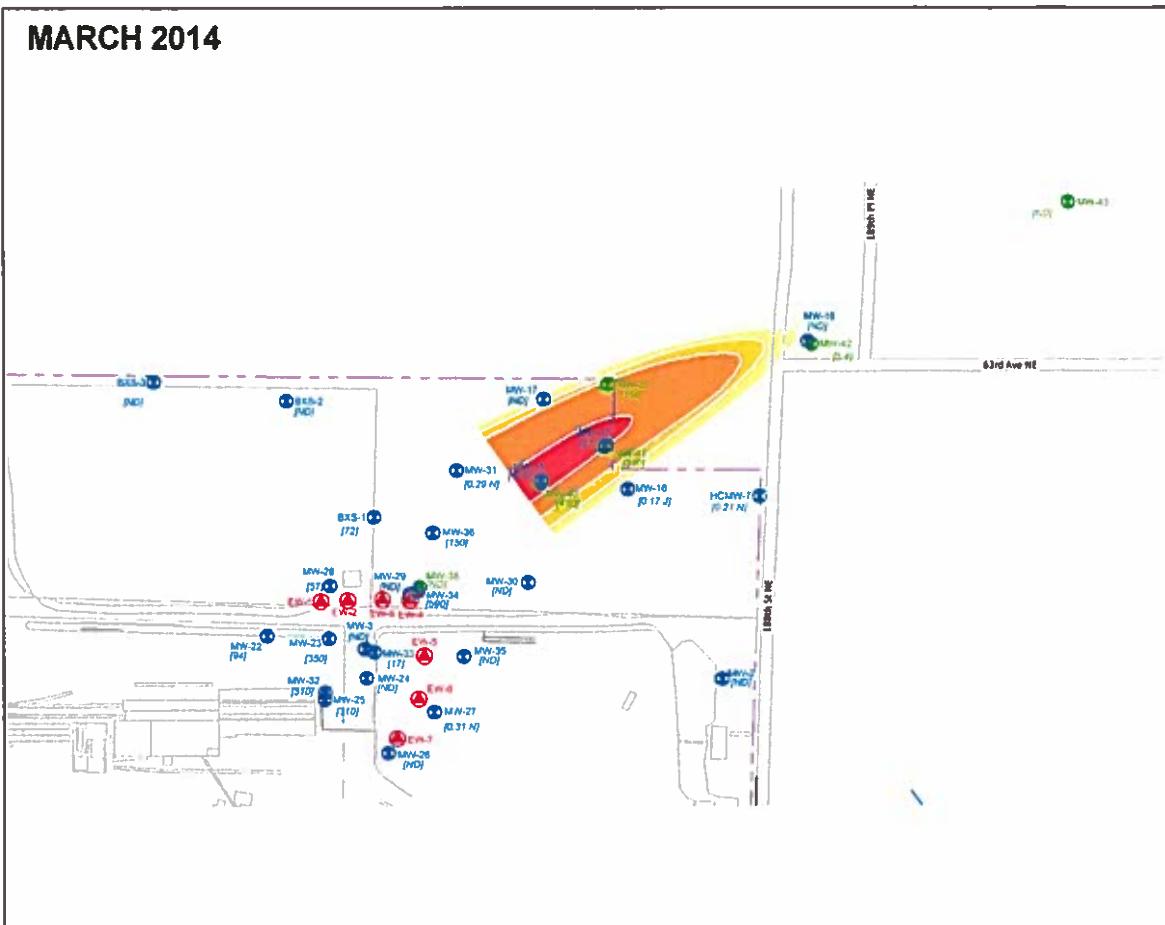
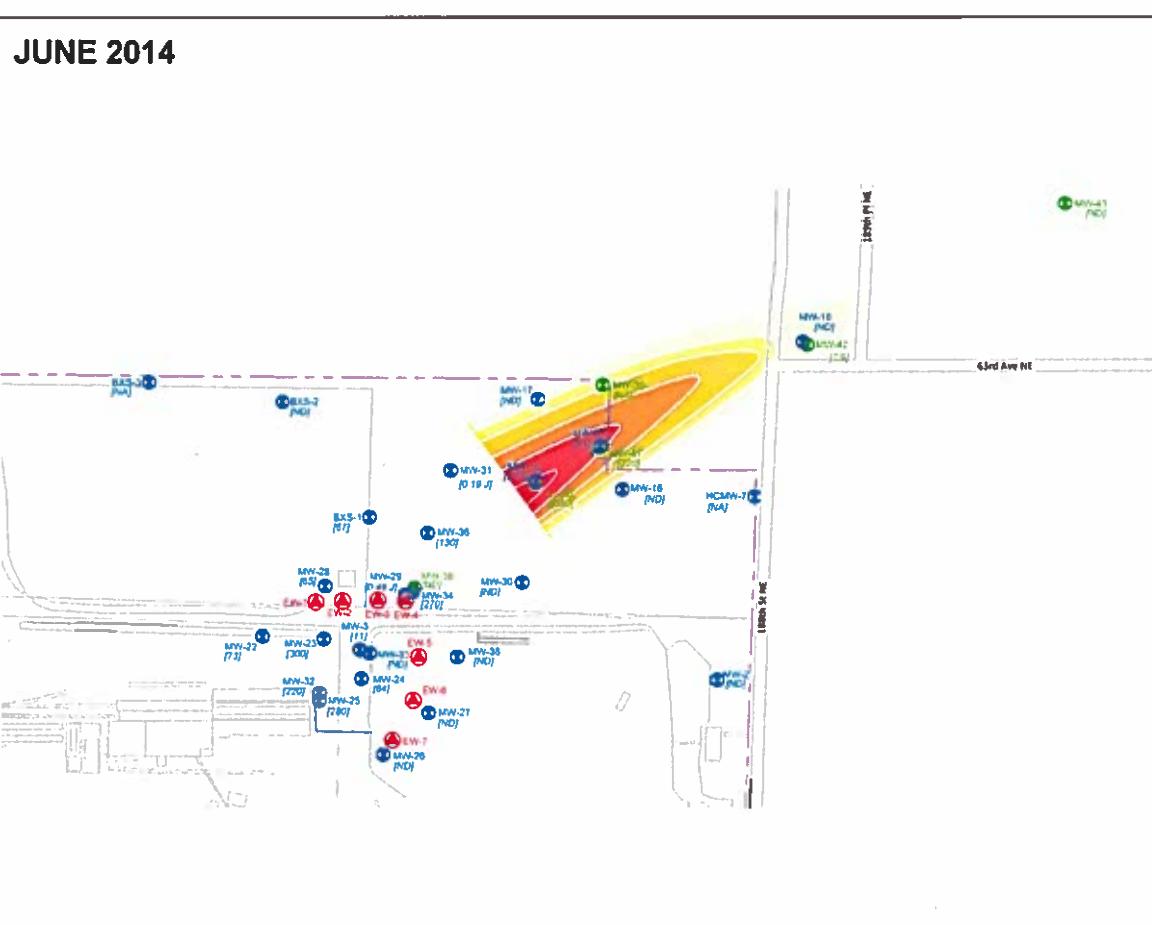


FIGURE 19

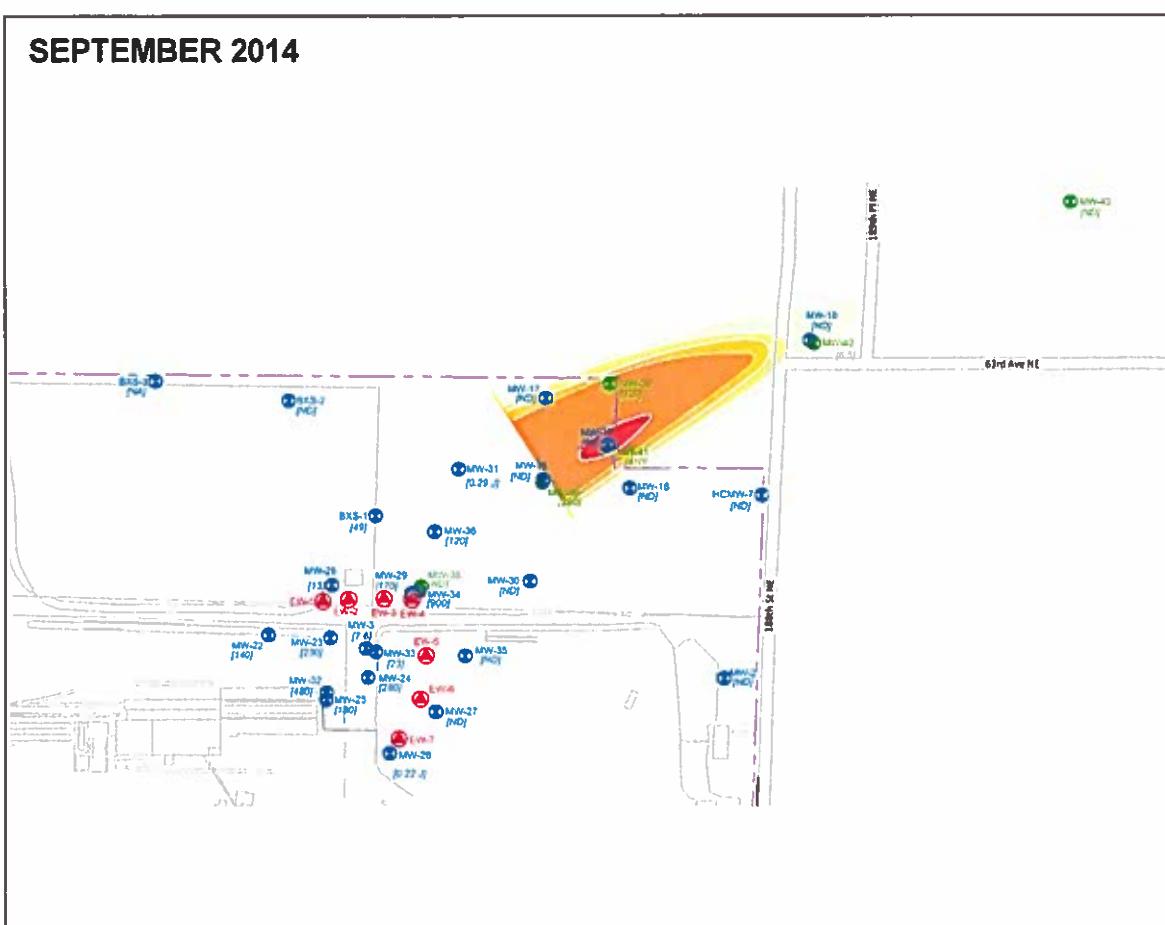
Pentachlorophenol Isopleth Map, Deep Zone:  
Fourth Quarter 2013 - Third Quarter 2014

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

JUNE 2014



SEPTEMBER 2014



LEGEND

● Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)

● Deep Monitoring Well and PCP Concentration (ug/L)

● Groundwater Extraction Well

— Site Boundary

ND Not-Detected

NA Not Analyzed

Pentachlorophenol Concentration (ug/L)

>500

>300 - 500

>100 - 300

>50 - 100

>10 - 50

>1 - 10



0 175 250 325  
Feet



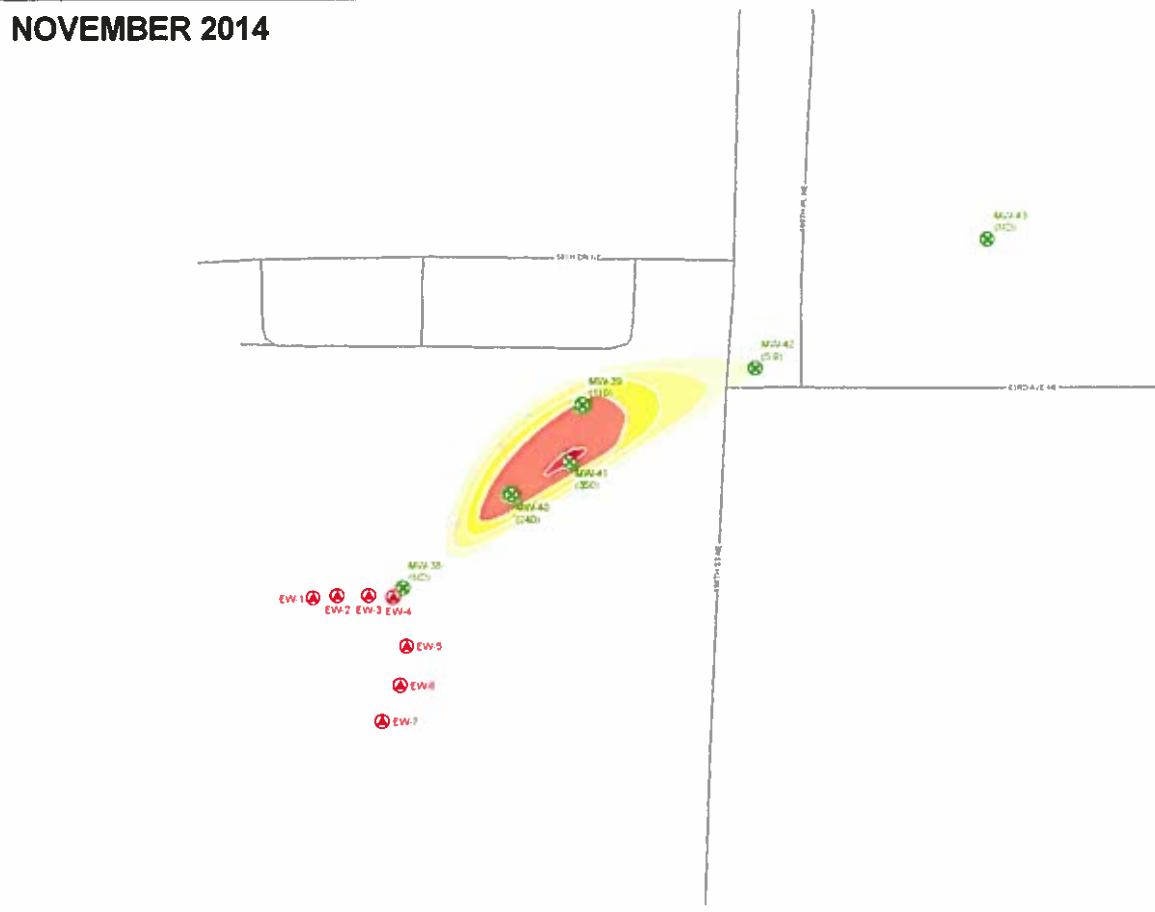
MAP NOTES:

Date: July 27, 2016

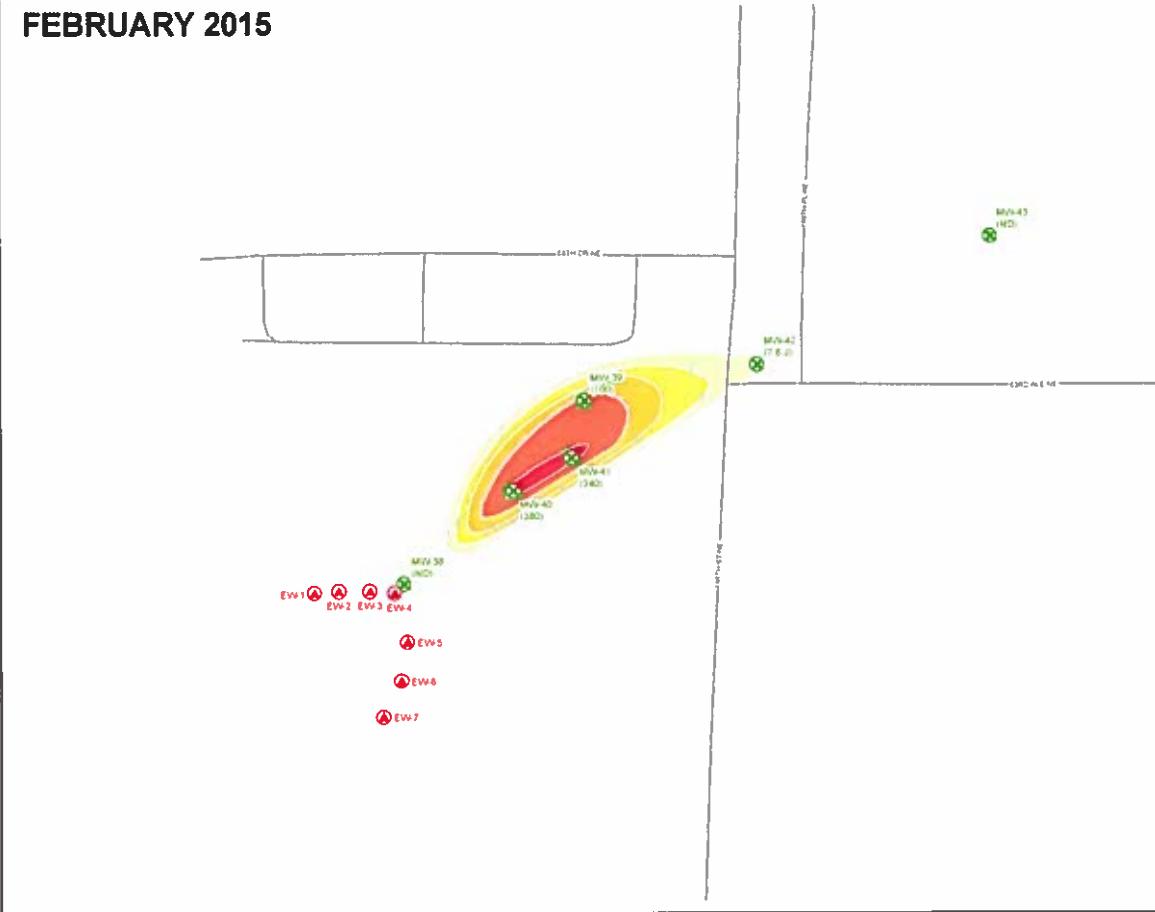
Data Sources: AMEC, Figure 35,

August 2014

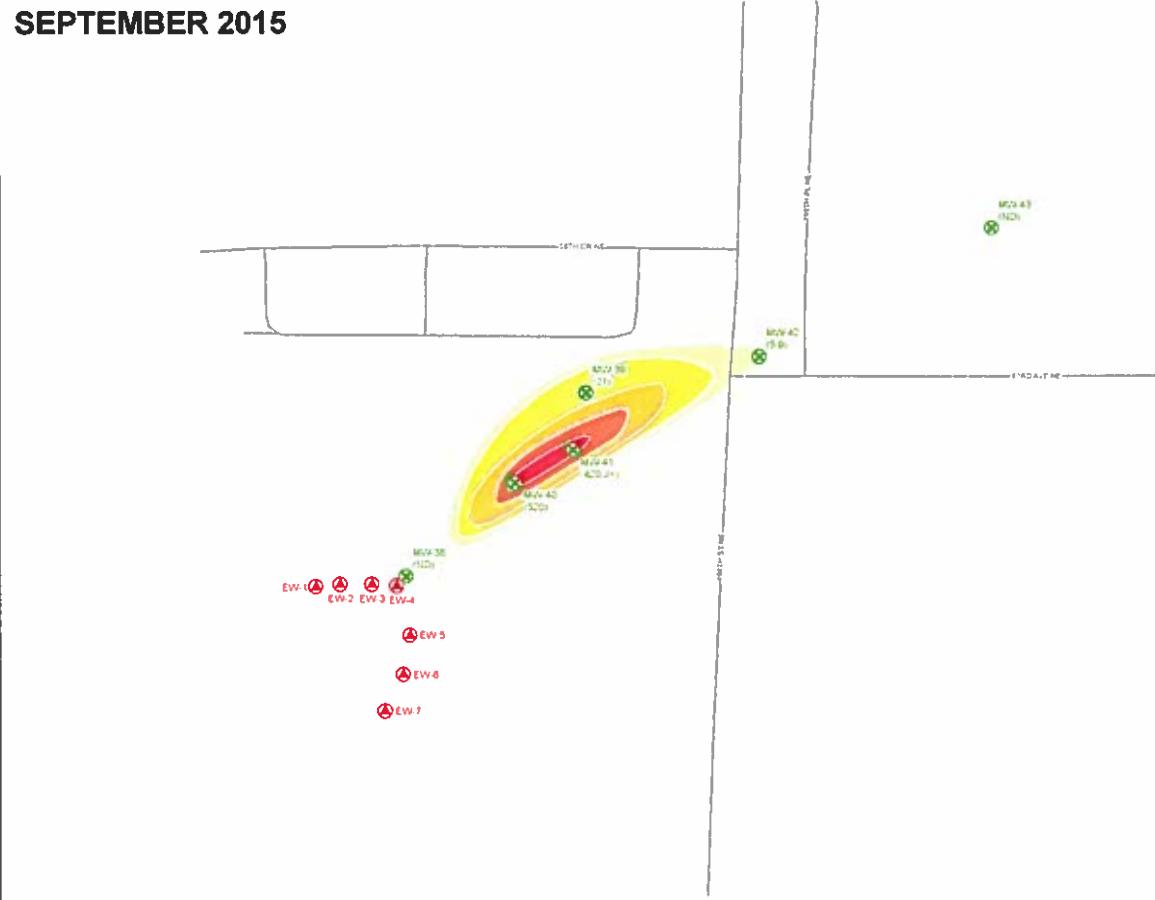
NOVEMBER 2014



FEBRUARY 2015



SEPTEMBER 2015



DECEMBER 2015

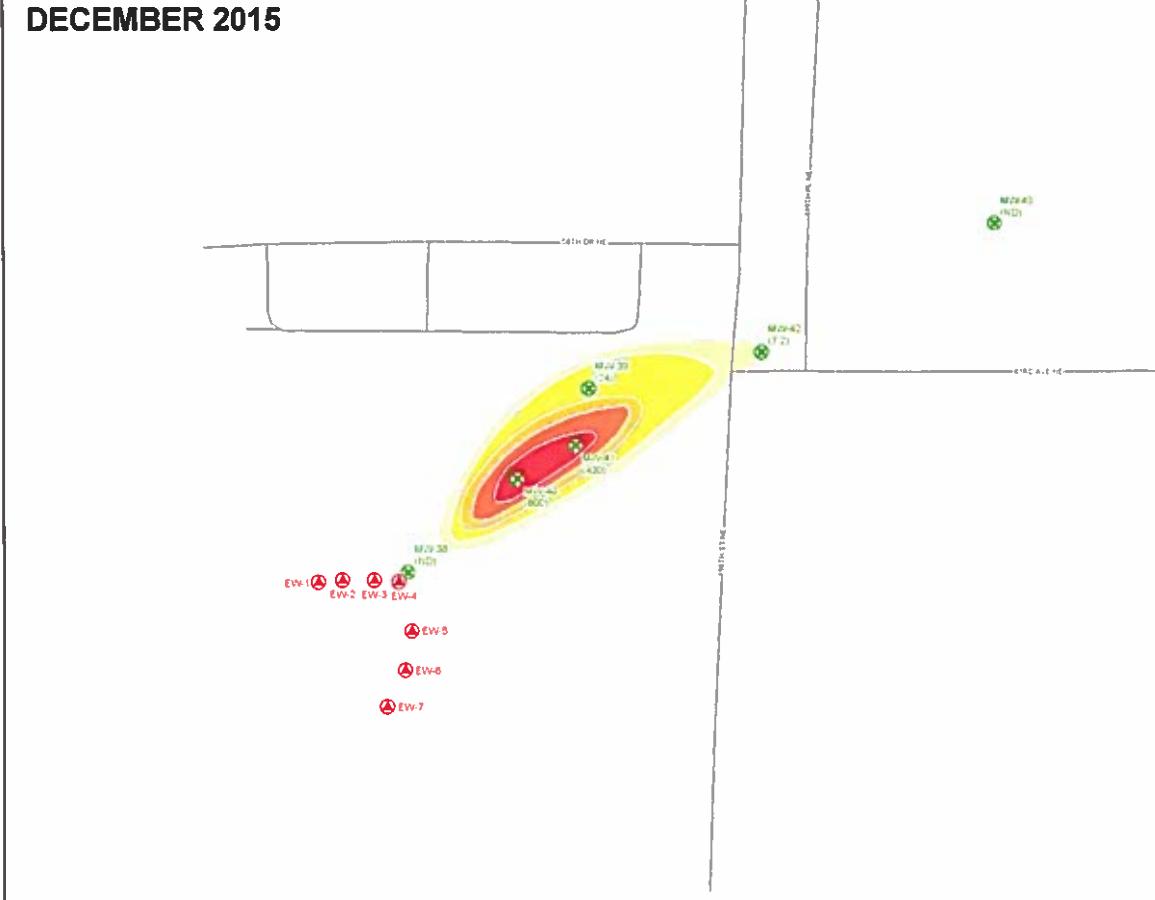


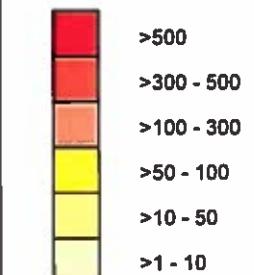
FIGURE 20

Pentachlorophenol Isopleth Map, Deep Zone:  
Fourth Quarter 2014 - Fourth Quarter 2015  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

LEGEND

- Monitoring Well and Pentachlorophenol (PCP) Concentration (ug/L)
- Deep Monitoring Well and PCP Concentration (ug/L)
- Groundwater Extraction Well
- Site Boundary
- ND Not-Detected
- NA Not Analyzed

Pentachlorophenol Concentration (ug/L)



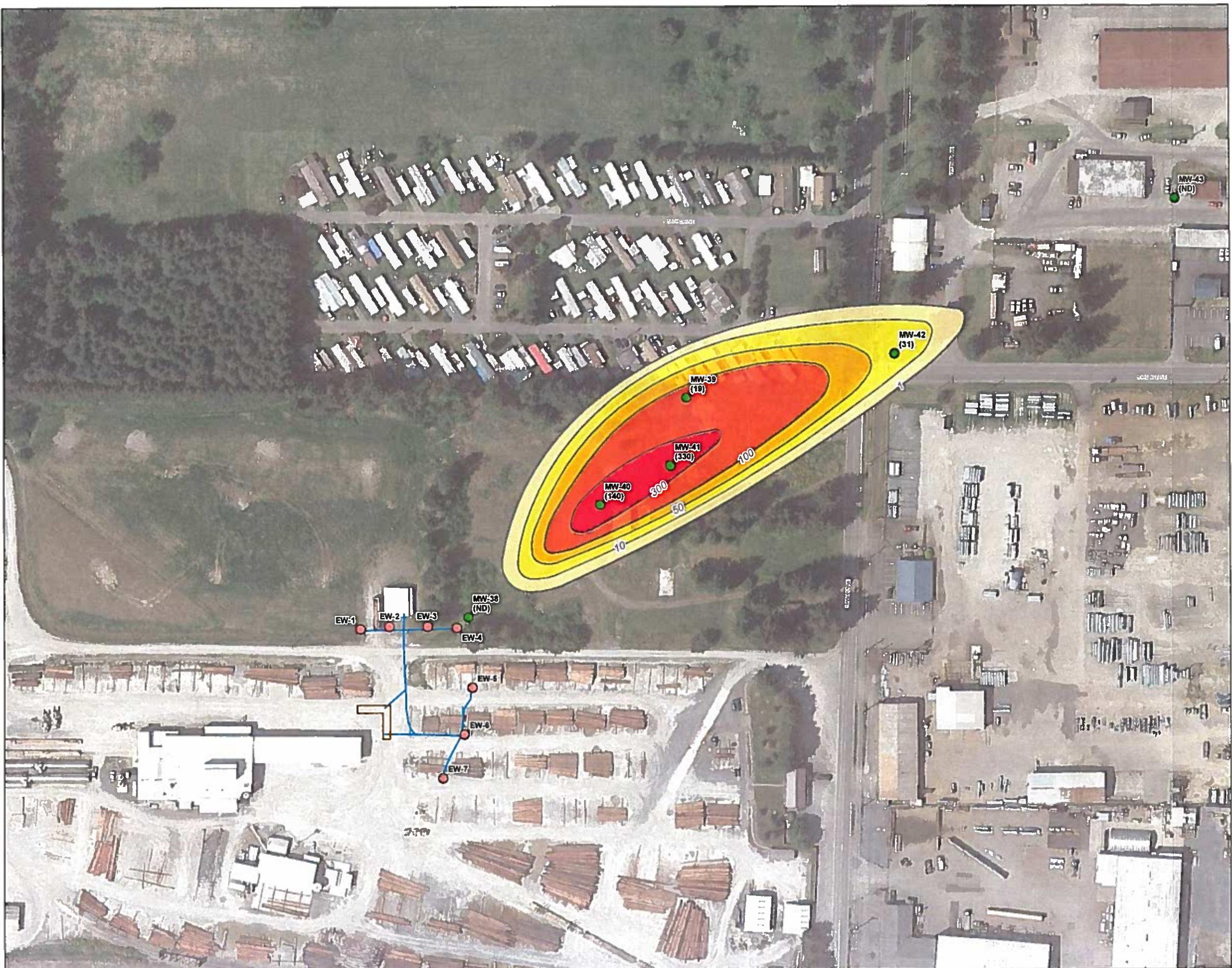
MAP NOTES:  
Date: July 27, 2016  
Data Sources: GSI Figure,  
March 2015



**FIGURE 21**

Pentachlorophenol Isopleth Map,  
Deep Zone:  
First Quarter 2016

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



**LEGEND**

● Deep Monitoring Well and Pentachlorophenol (PCP) Concentration ( $\mu\text{g/L}$ ) February 2016

**Pentachlorophenol Concentrations ( $\mu\text{g/L}$ )**

■ >300

■ >100 - 300

■ >50 - 100

■ >10 - 50

■ >1 - 10

**All Other Features**

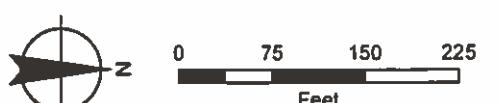
● Extraction Well

— Infiltration Gallery Piping

— Infiltration Trench

**NOTES:**

1. Results in  $\mu\text{g/L}$ .
2. All elevations exist in the North American Vertical Datum of 1988.
3. Abbreviations:  
ND Not Detected



**MAP NOTES:**

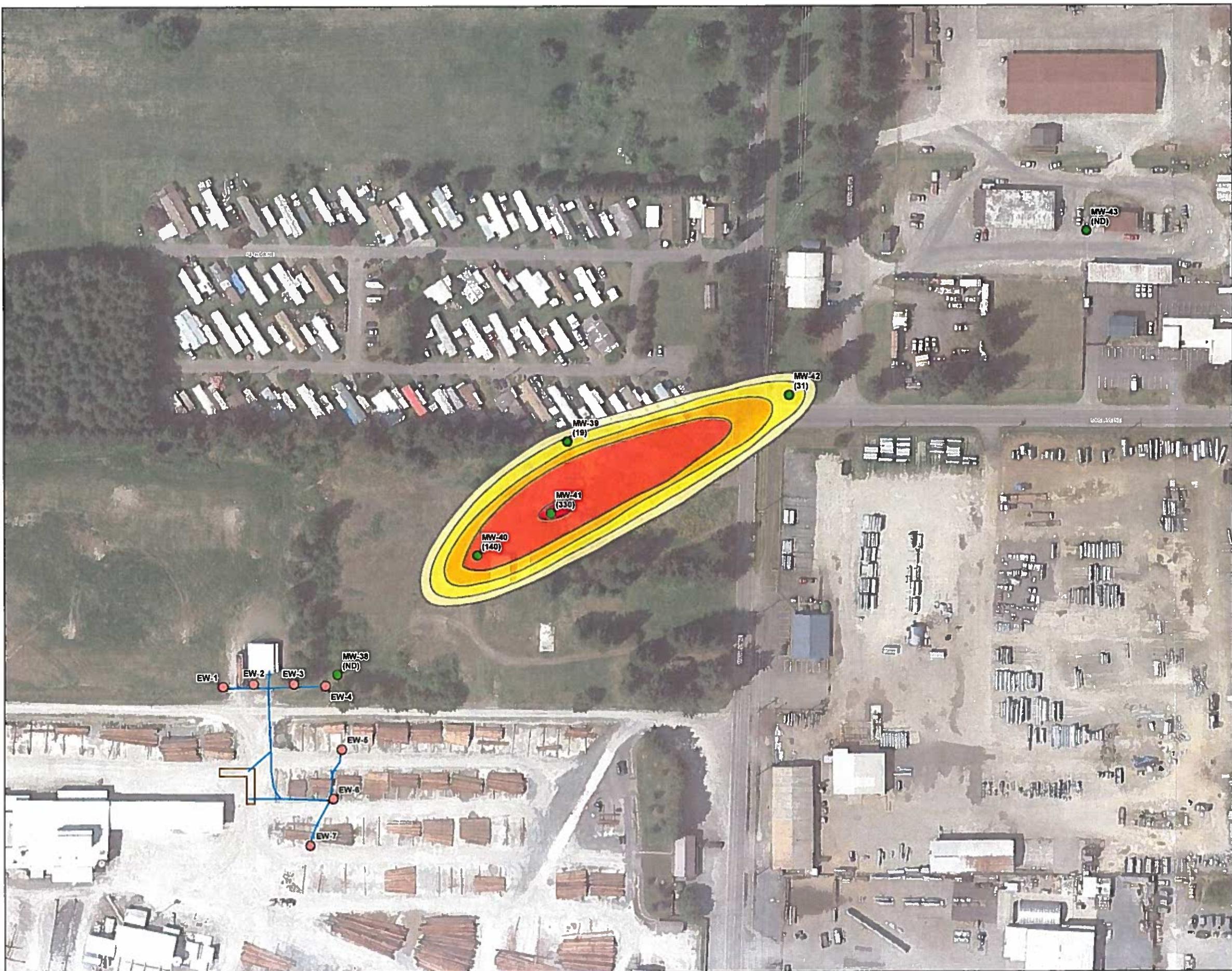
Date: July 27, 2016

Data Sources: AMEC, ESRI, Air photo taken on May 2, 2015 by Google Earth

FIGURE 22

Pentachlorophenol Isopleth Map,  
Deep Zone:  
Second Quarter 2016

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



LEGEND

● Deep Monitoring Well and Pentachlorophenol (PCP) Concentration ( $\mu\text{g/L}$ ) June 2016

Pentachlorophenol Concentrations ( $\mu\text{g/L}$ )

>300

>100 - 300

>50 - 100

>10 - 50

>1 - 10

All Other Features

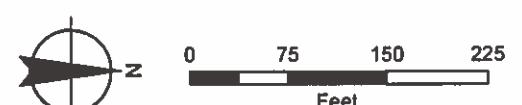
● Extraction Well

— Infiltration Gallery Piping

— Infiltration Trench

NOTES:

1. Results in  $\mu\text{g/L}$ .
2. All elevations exist in the North American Vertical Datum of 1988.
3. Abbreviations:  
ND Not Detected



MAP NOTES:

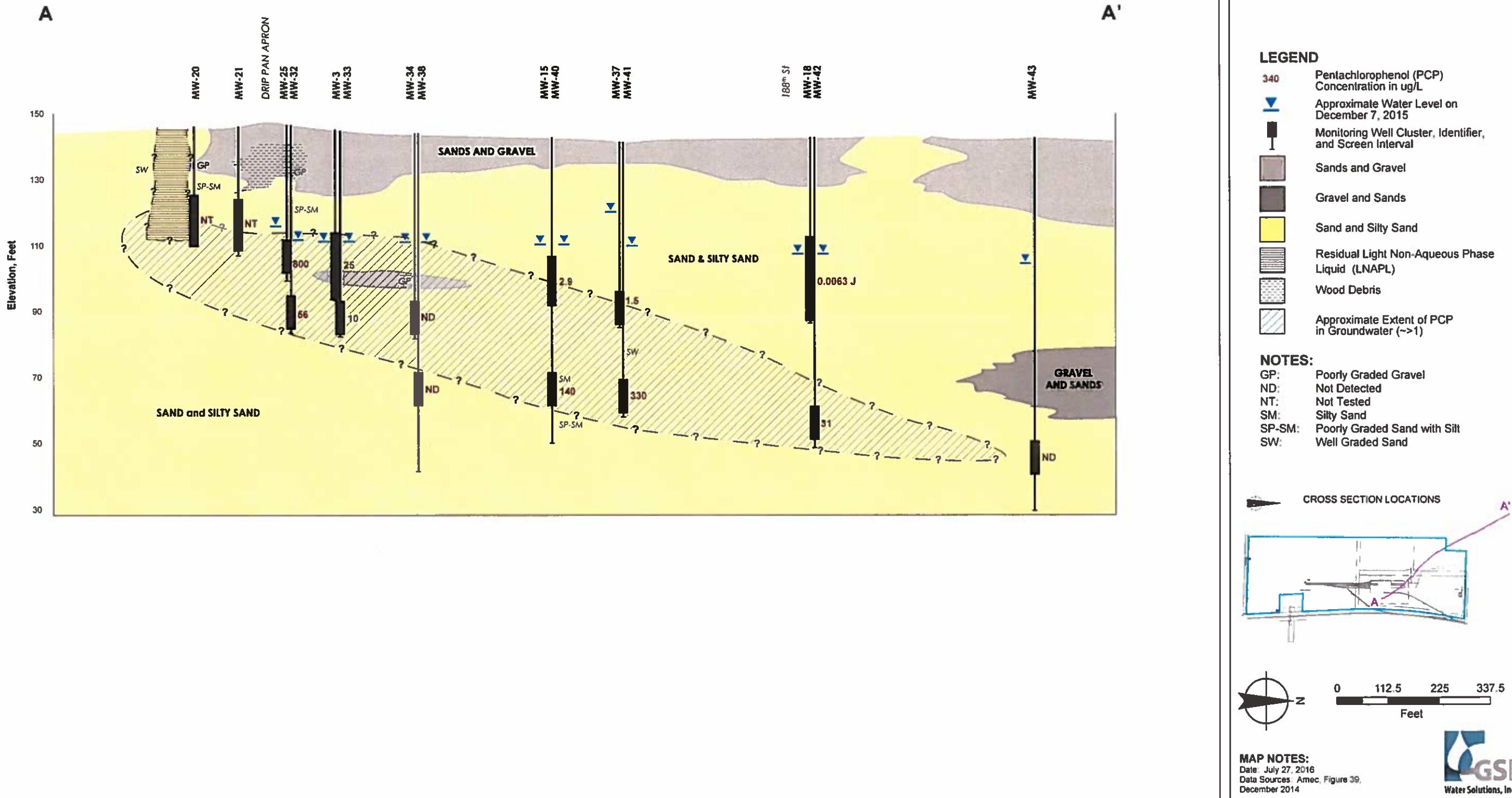
Date: April 8, 2016  
Data Sources: AMEC, ESRI, Air photo taken on May 2, 2015 by Google Earth



FIGURE 23

## Cross Section A-A' Chlorophenol in Groundwater Second Quarter 2016

**Former J.H. Baxter Wood Treating Facility  
Arlington, Washington**



**FIGURE 24**

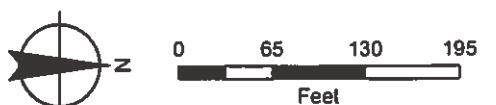
Total PAHs in Groundwater:  
Second Quarter 2014 - Second Quarter 2016

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



**NOTES:**

1. Results in  $\mu\text{g/L}$  (microgram per liter)
2. Abbreviations:
  - ND Not-Detected
  - NA Not Analyzed
  - J Estimated Value



**MAP NOTES:**

Date: April 8, 2016  
Data Sources: AMEC, ESRI, Air photo taken on May 2, 2015 by Google Earth

## **Appendix A**

---

**FIGURE A-1**

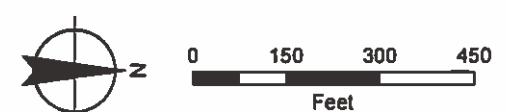
Cross Section Location Map

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



**LEGEND**

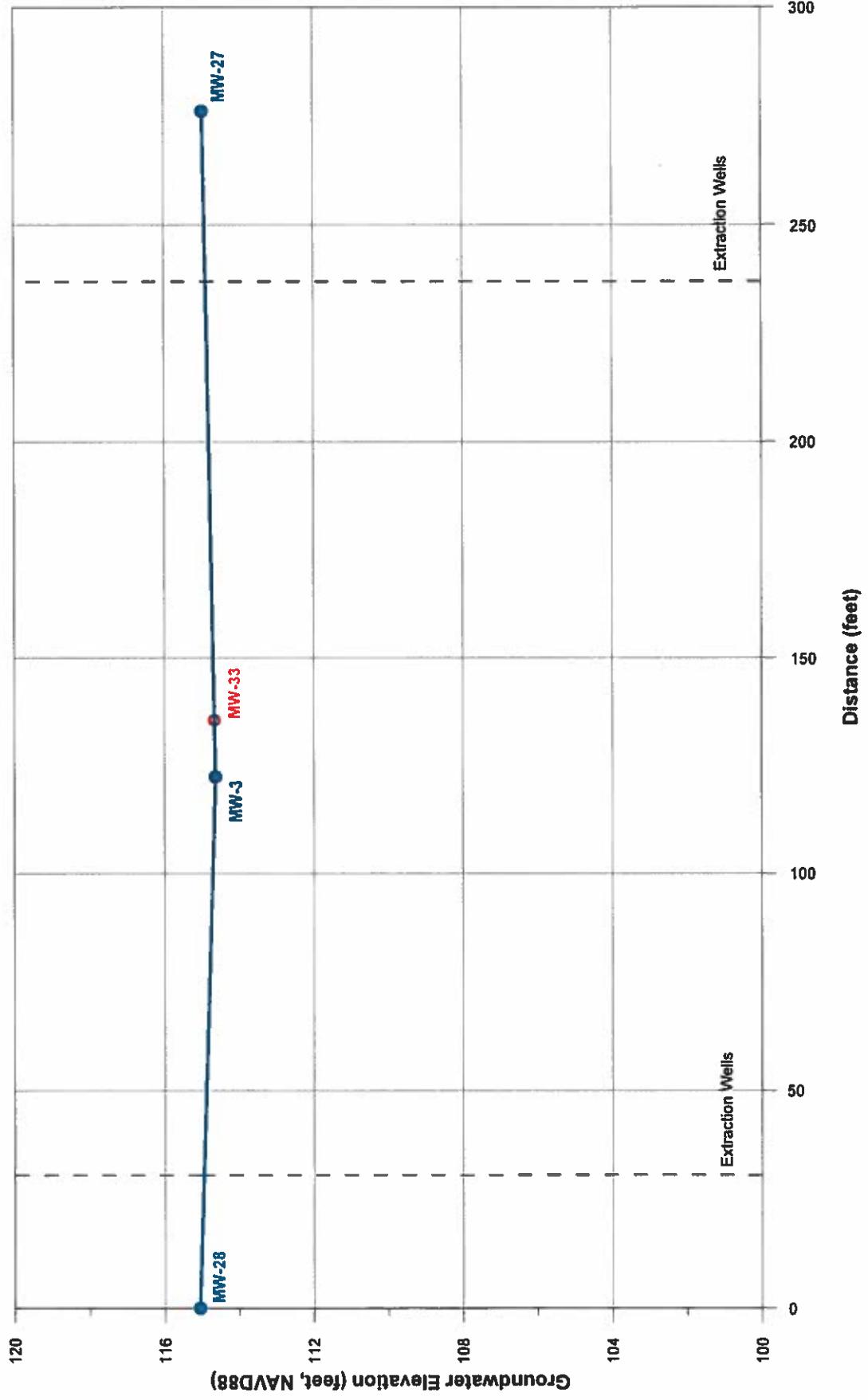
- Cross Section Lines
- Monitoring Well
- Recovery Well
- Extraction Well
- Infiltration Trench



**MAP NOTES:**

Date: March 12, 2015  
Data Sources: AMEC, ESRI. Air photo taken on July 8, 2010 by Microsoft

### Cross Section A-A'



#### Legend:

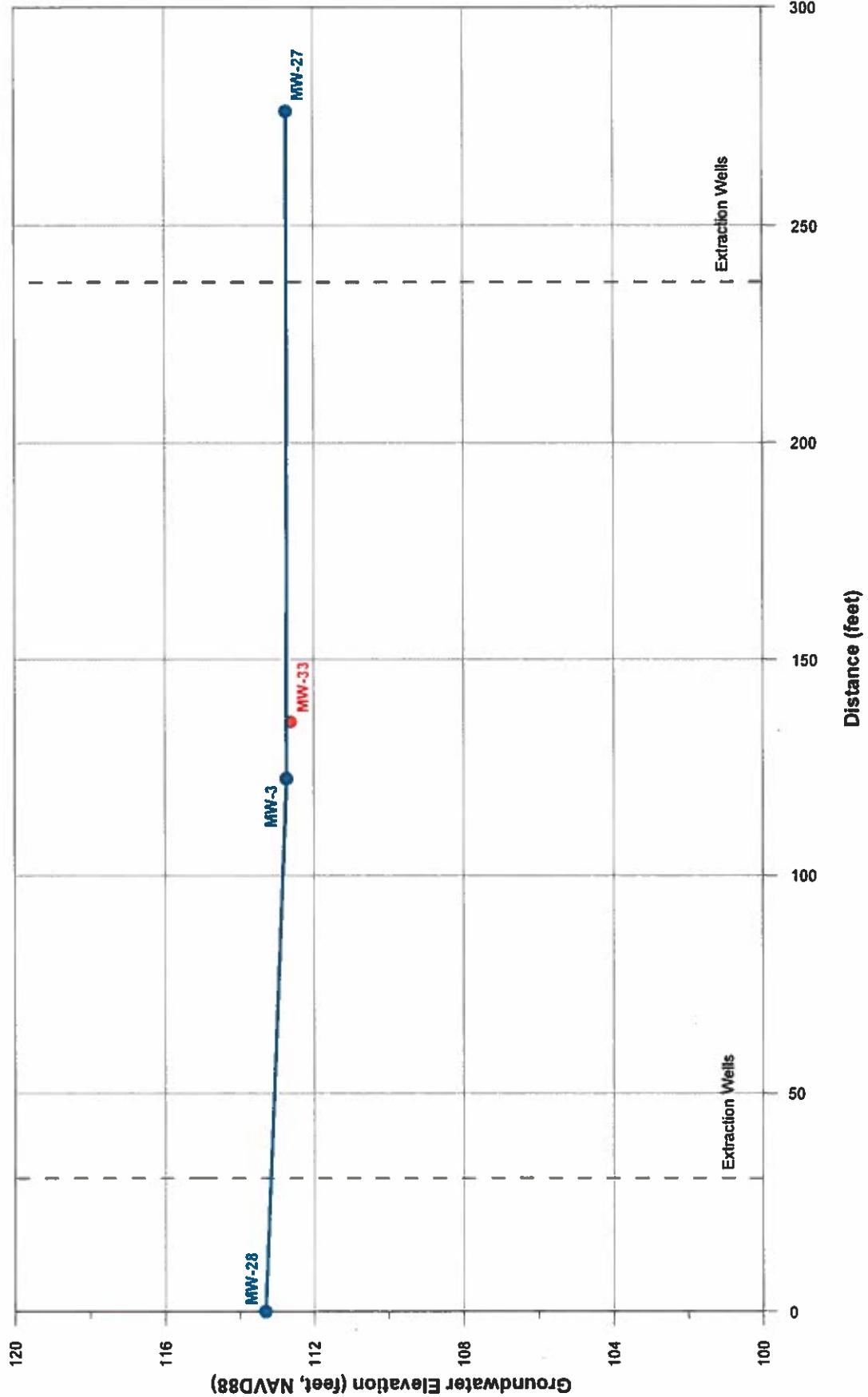
- Shallow Well Groundwater Elevation
- Intermediate Well Groundwater Elevation

**FIGURE A-2**  
**First Quarter 2016 Groundwater Elevation**  
**Cross Section A-A'**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



GSI Water Solutions, Inc.

### Cross Section A-A'

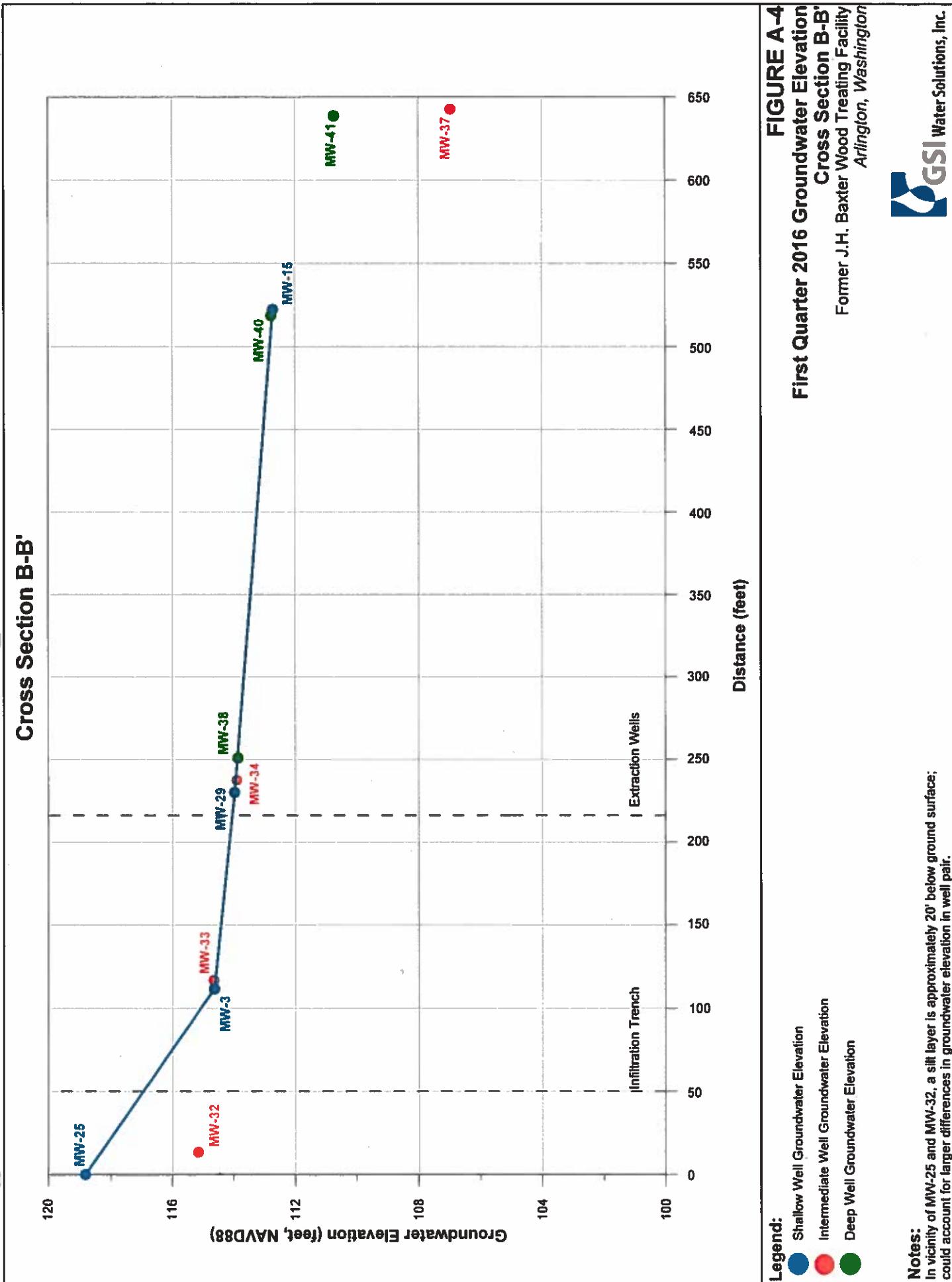


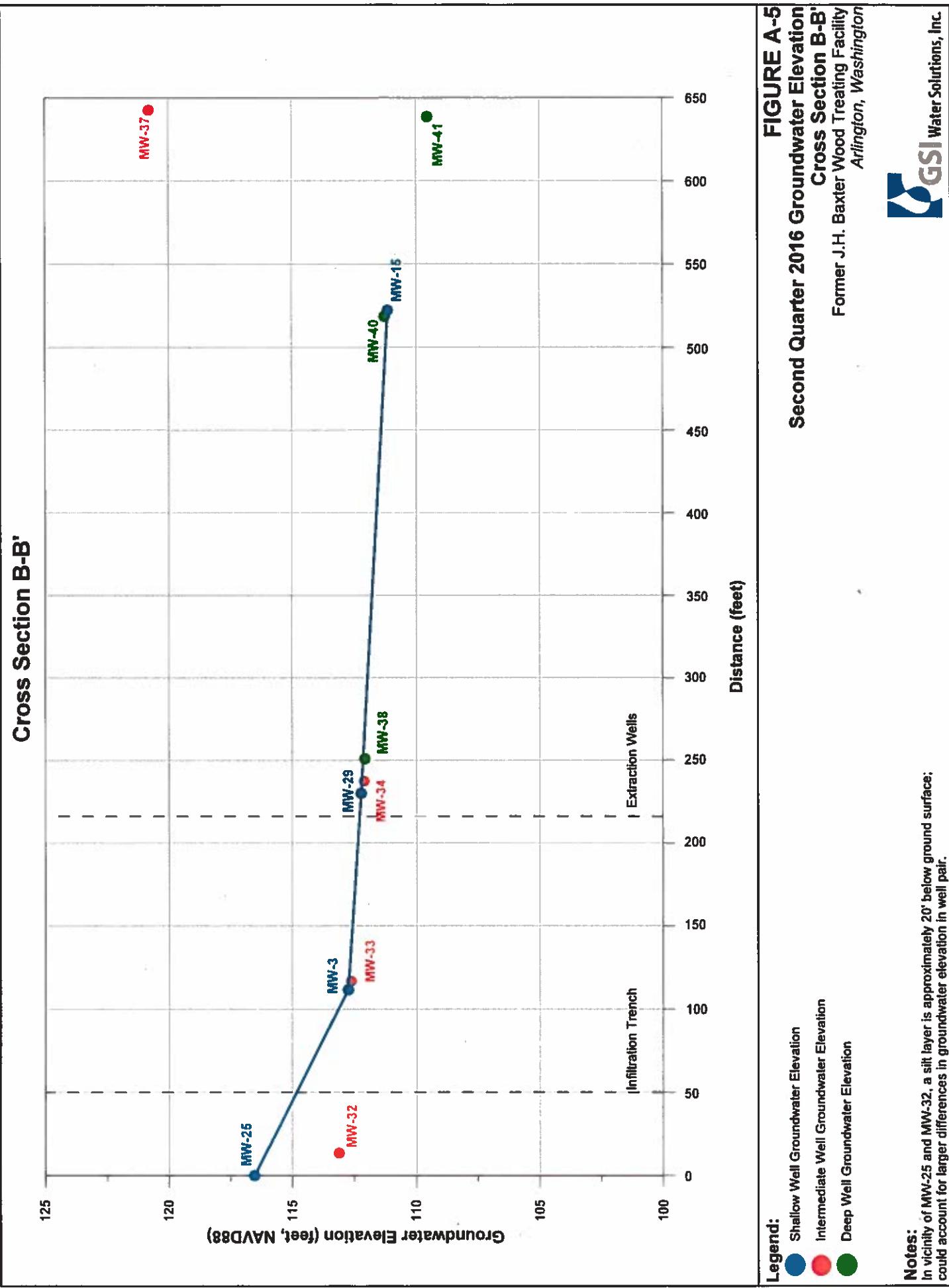
#### Legend:

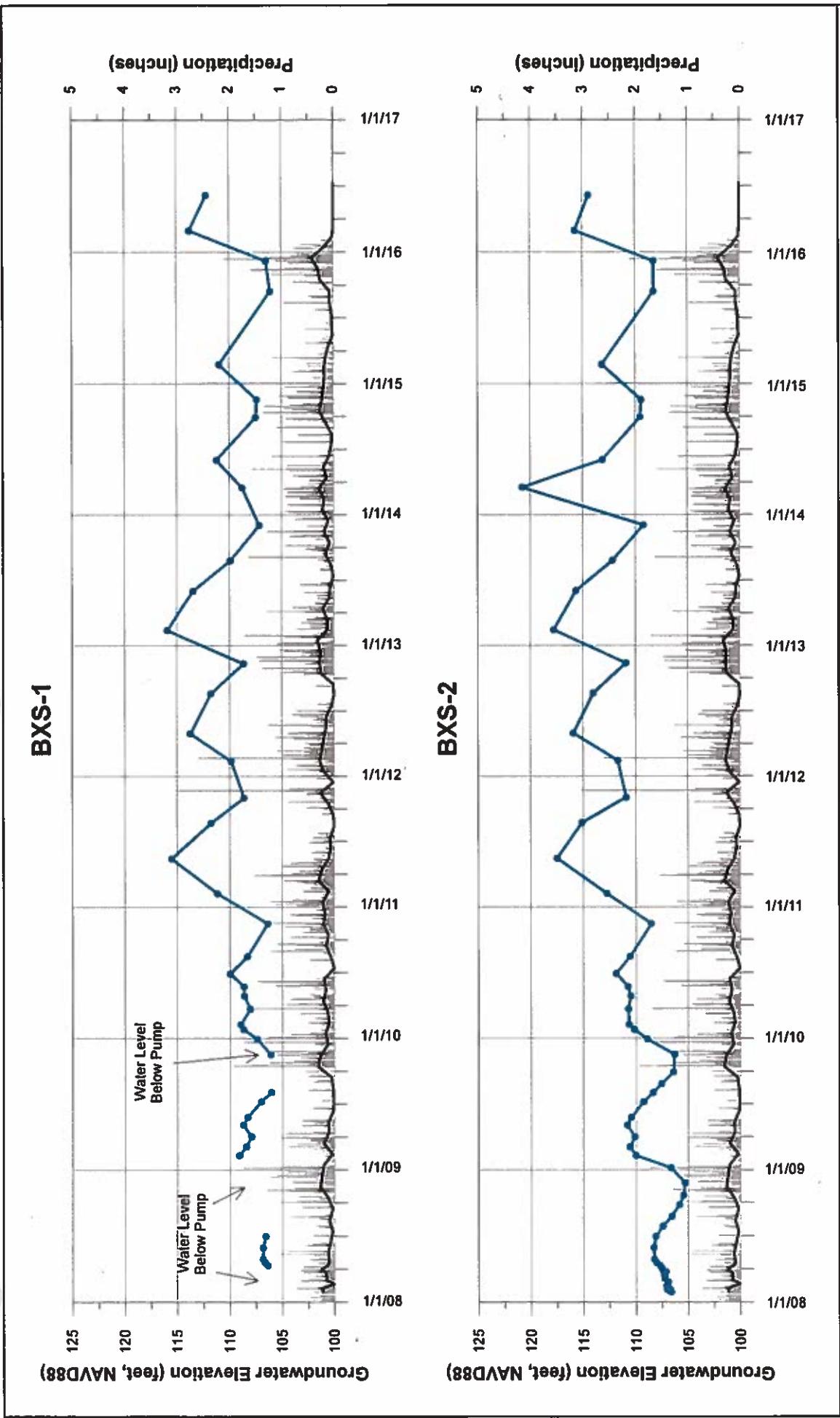
- Shallow Well Groundwater Elevation (Blue circle)
- Intermediate Well Groundwater Elevation (Red circle)

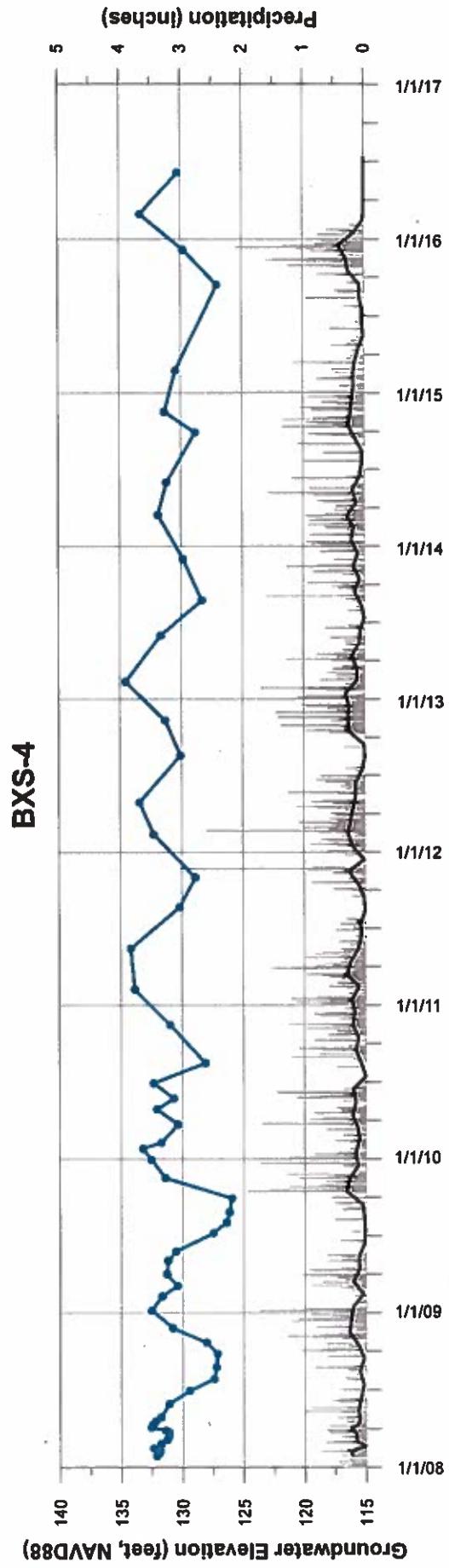
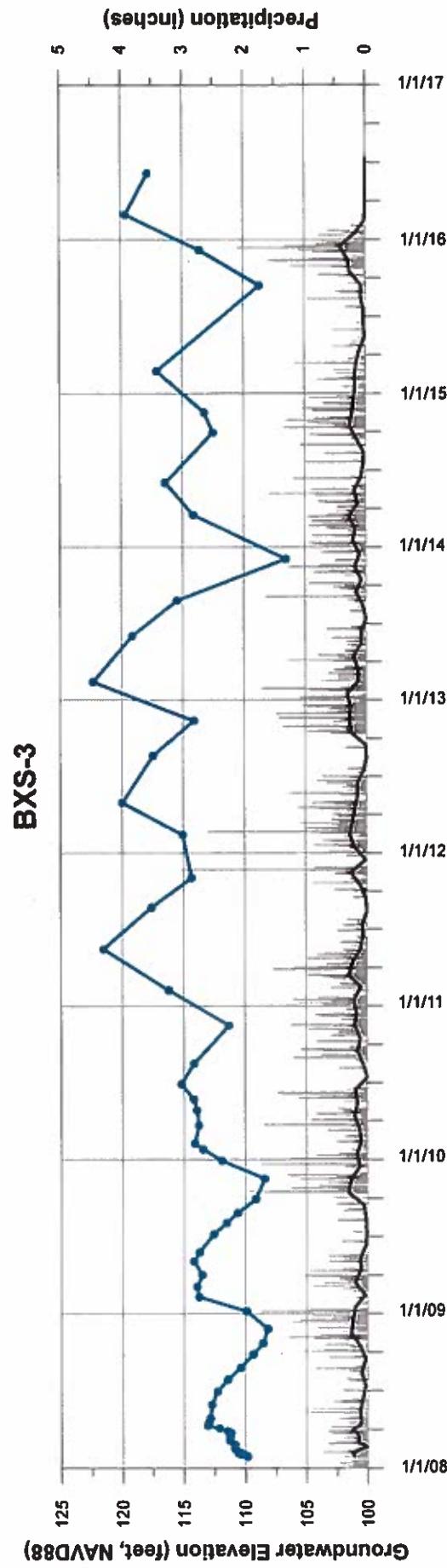
**FIGURE A-3**  
**Second Quarter 2016 Groundwater Elevation**  
**Cross Section A-A'**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington











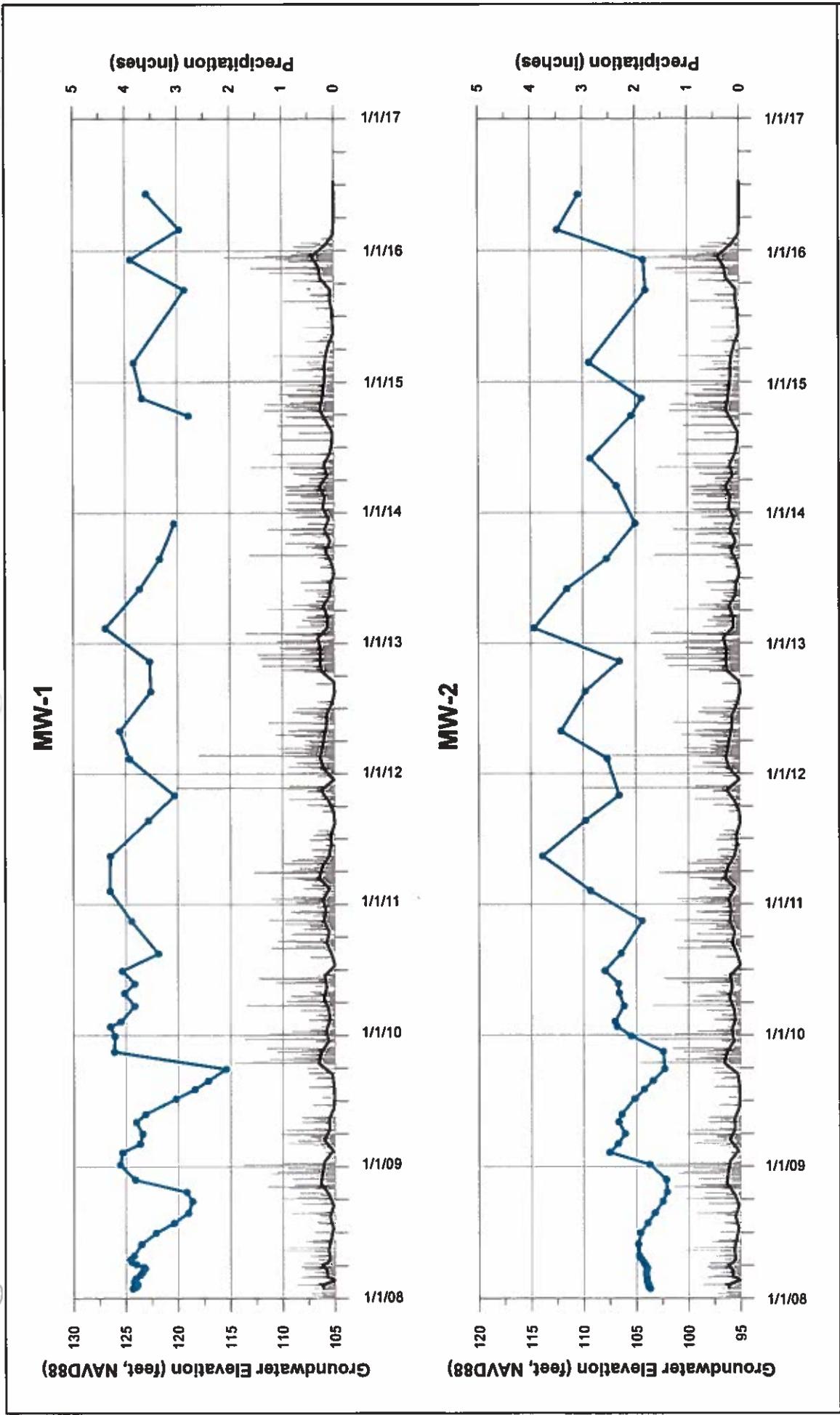
**FIGURE A-7**  
**BXS-3 and BXS-4 Hydrographs with Precipitation**  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington

**Legend:**

- Groundwater Elevation (blue circle)
- Daily Precipitation (gray bar)
- Avg Monthly Precipitation (black line)

**Notes:**  
 Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
 Precipitation includes rain and/or snow melt.

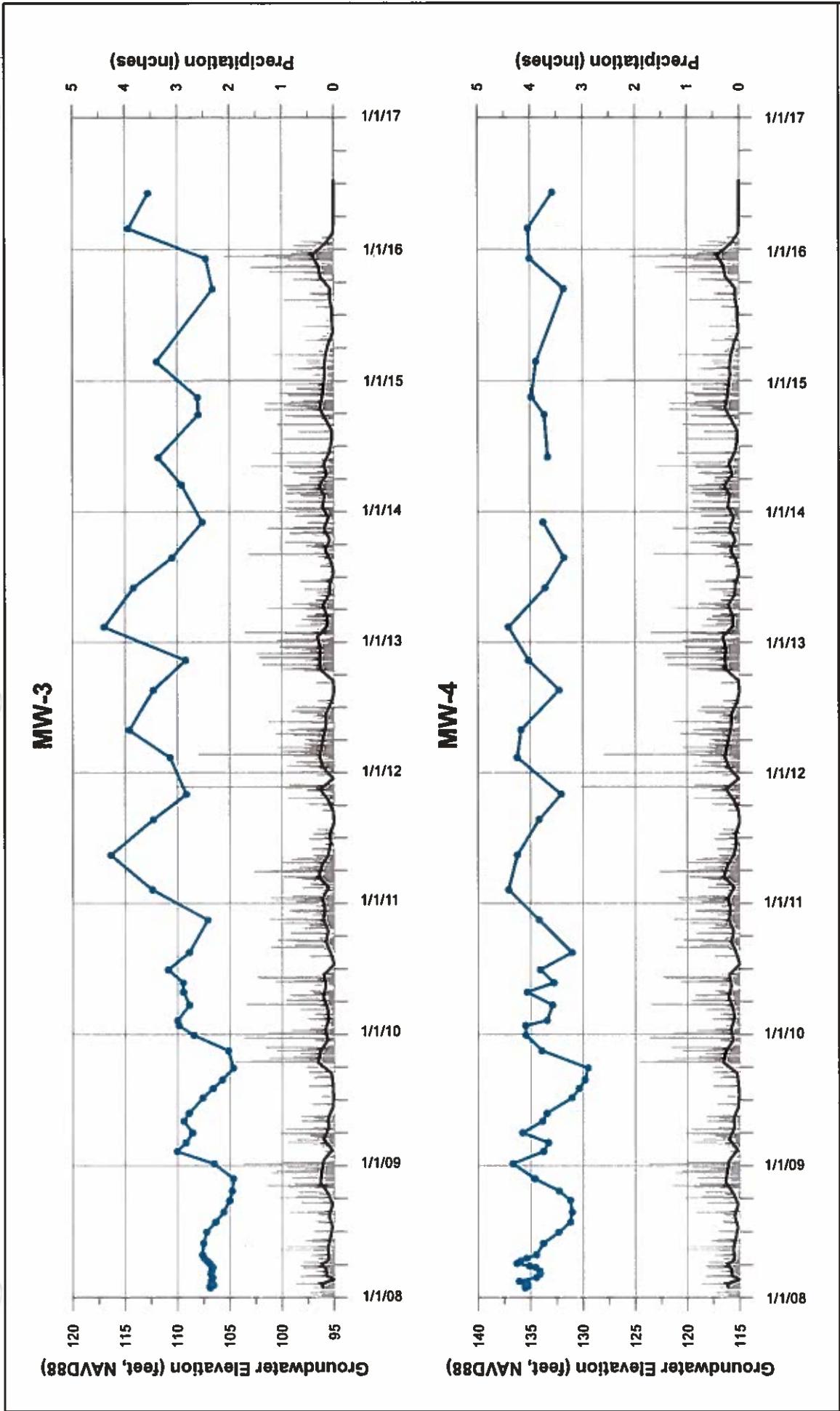




**FIGURE A-8**  
**MW-1 and MW-2 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
MW-1 was not measured during the First and Second Quarters in 2014.

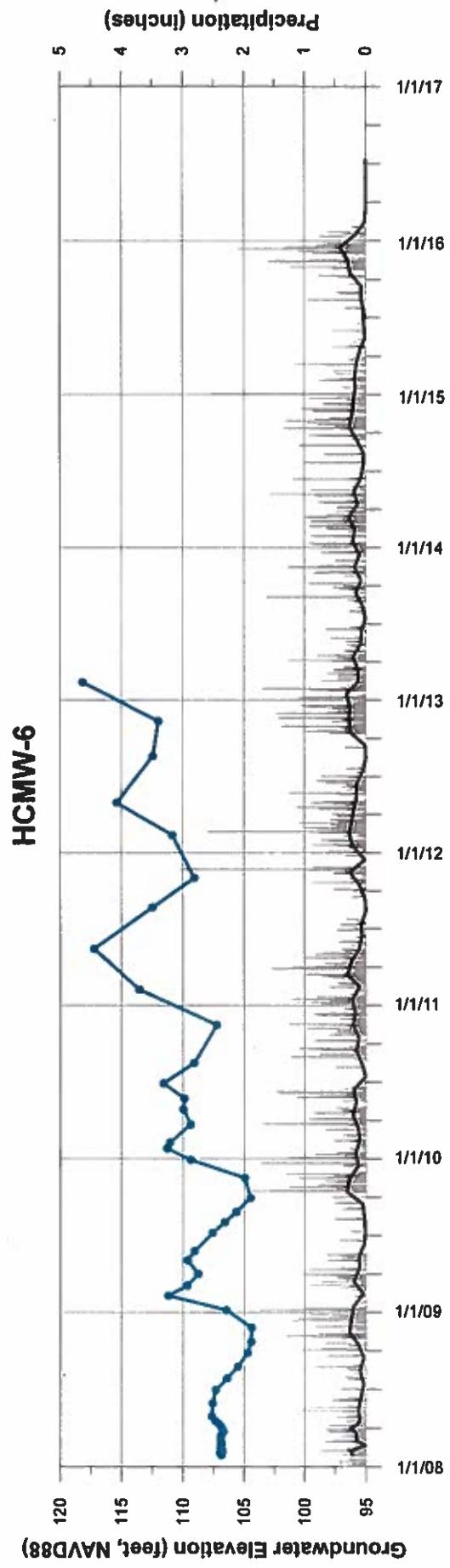
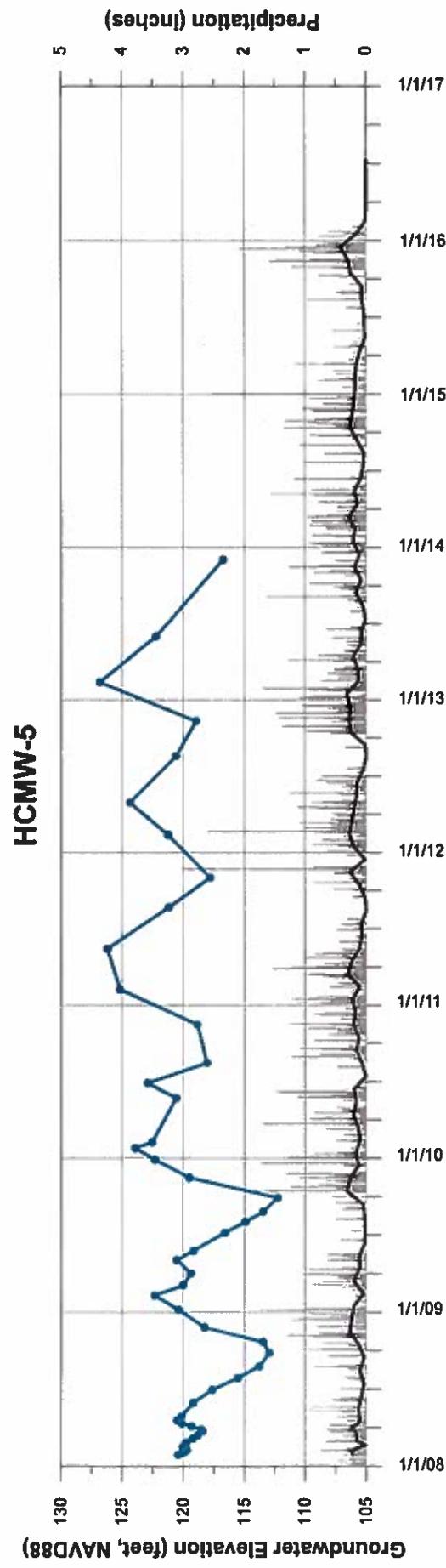




**FIGURE A-9**  
**MW-3 and MW-4 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.  
MW-4 was not measured during the First Quarter 2014.





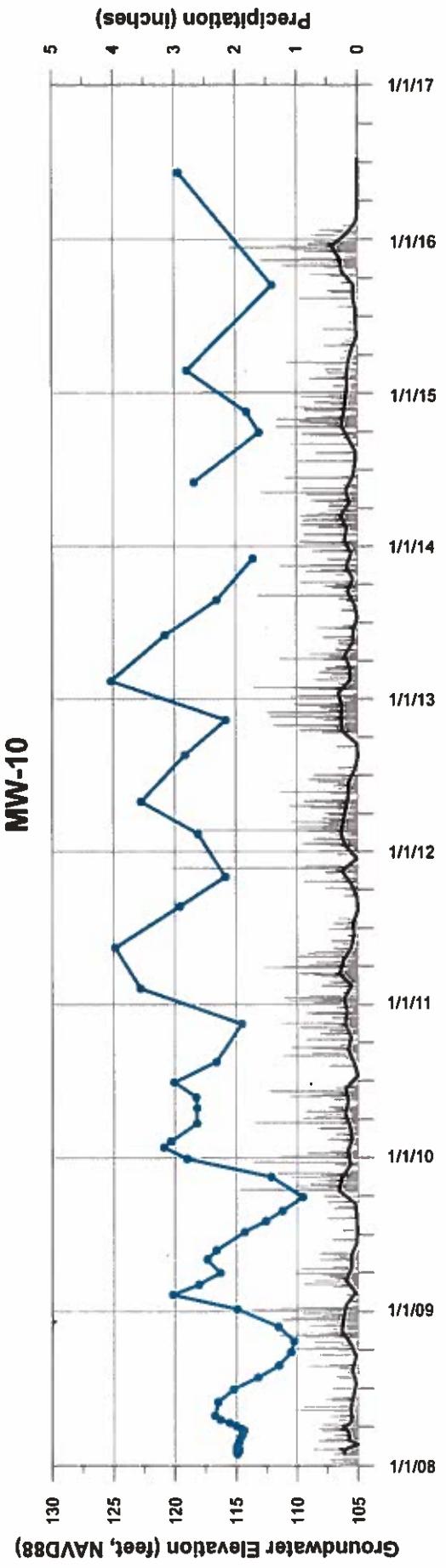
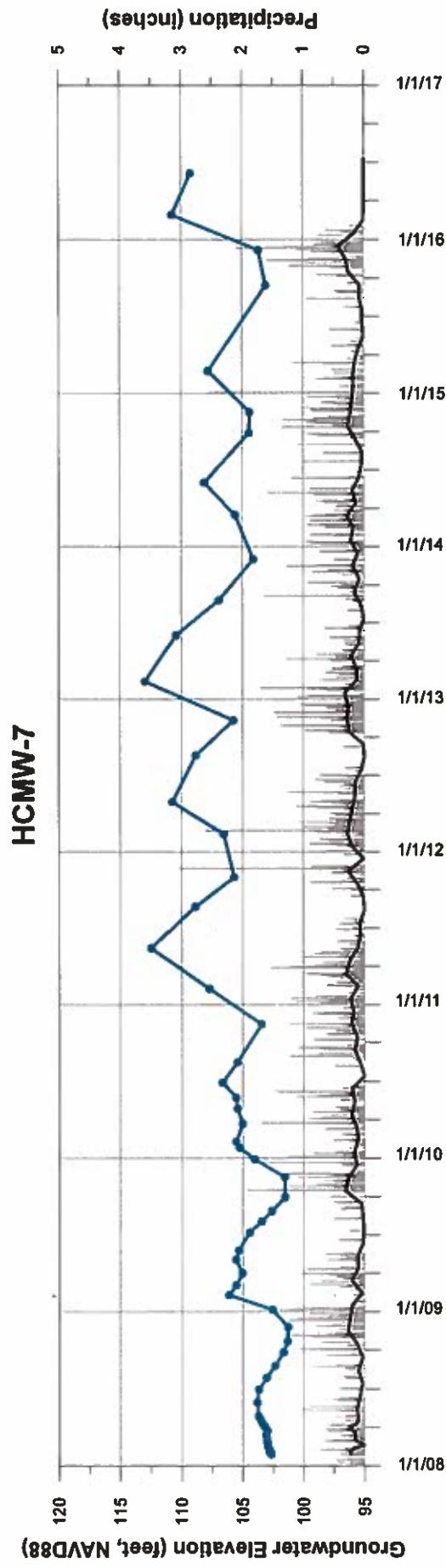
**Legend:**

- Groundwater Elevation
- Daily Precipitation
- Average Monthly Precipitation

**Notes:**  
 Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
 Precipitation includes rain and/or snow melt.  
 HCMW-5 was not measured after Fourth Quarter 2013.  
 HCMW-6 was not measured after First Quarter 2013.

**FIGURE A-10**  
**HCMW-5 and HCMW-6 Hydrographs with Precipitation**  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington





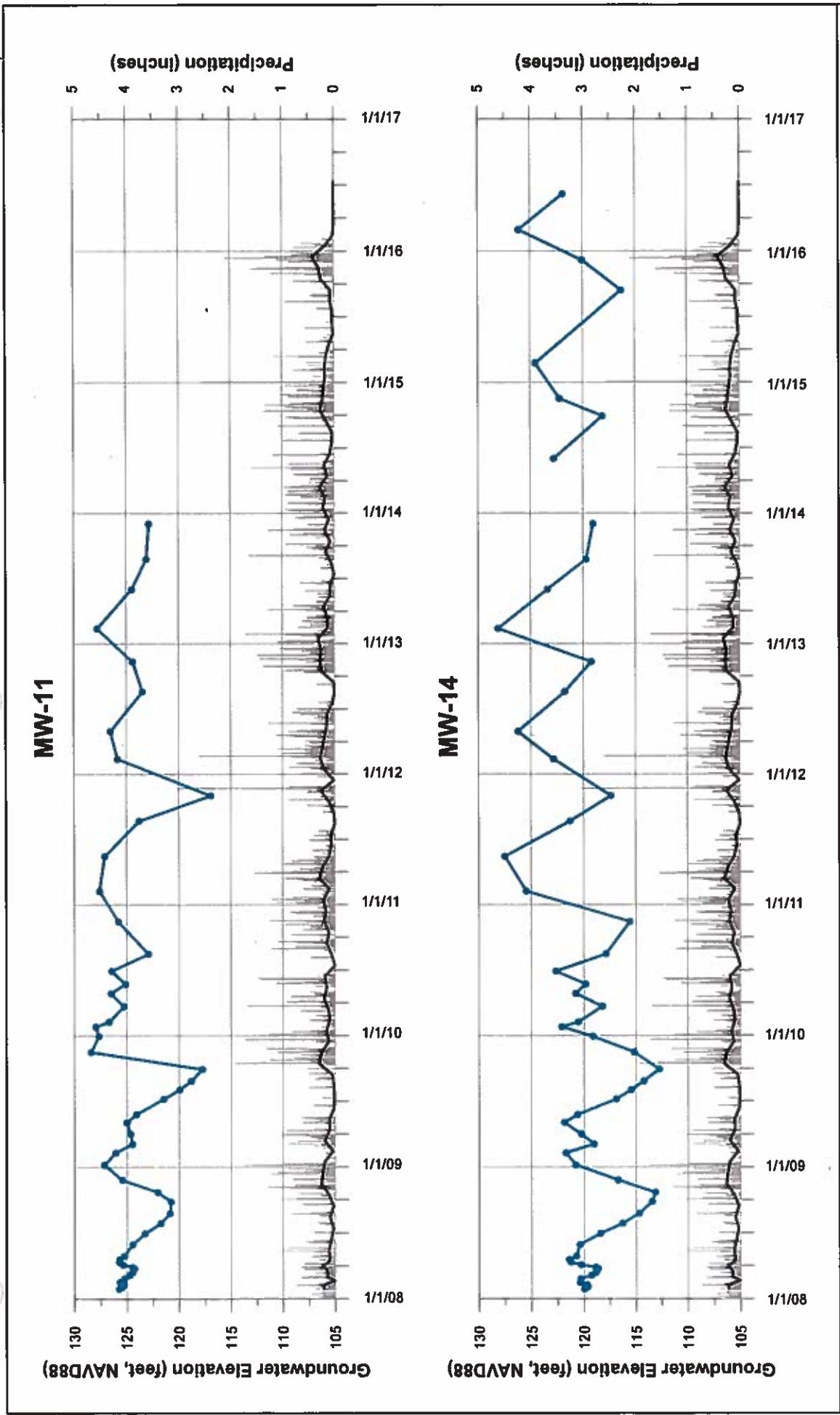
**FIGURE A-11**  
**HCMW-7 and MW-10 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Legend:**

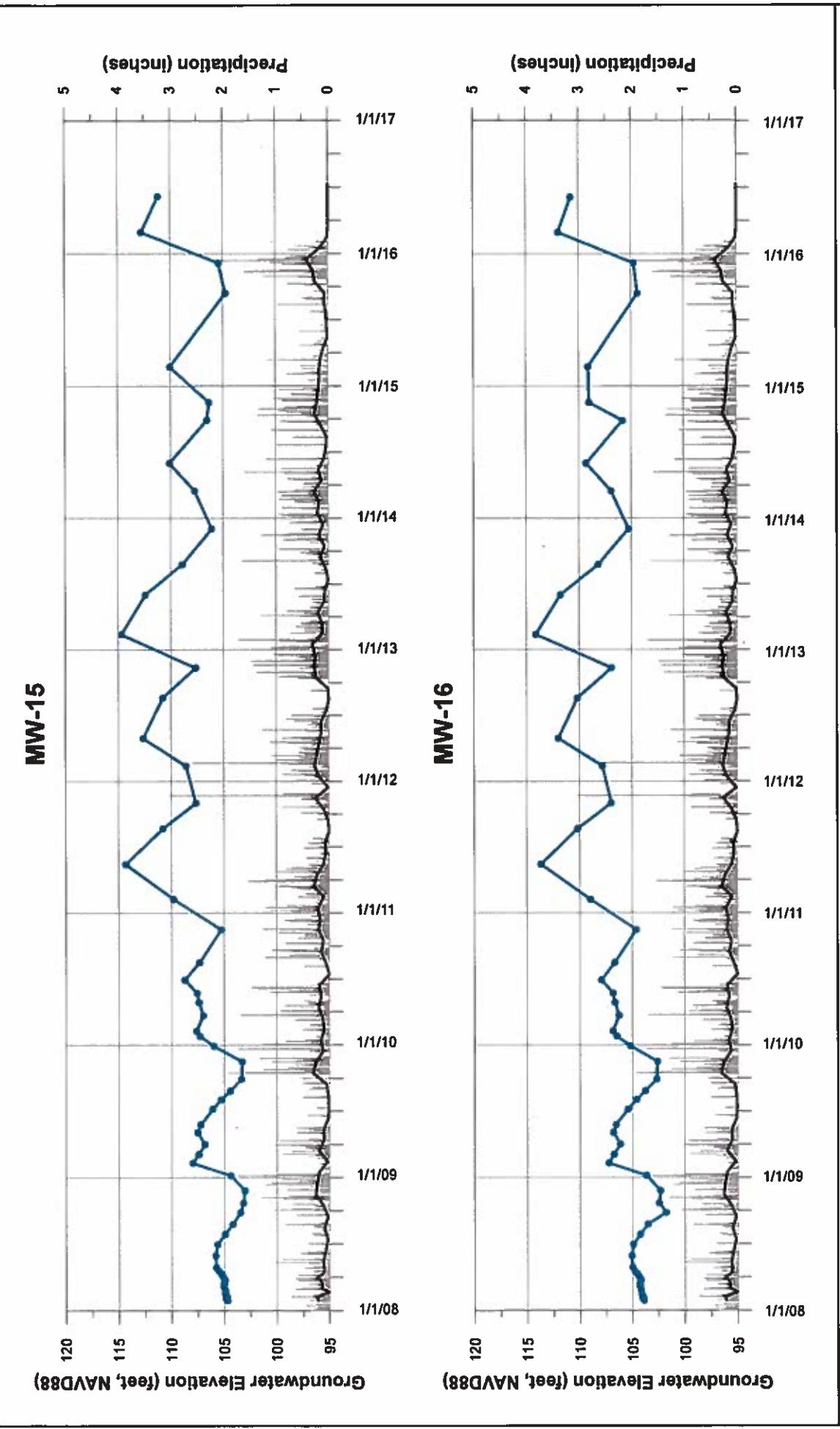
- Groundwater Elevation
- Daily Precipitation
- Average Monthly Precipitation

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.  
MW-10 was not measured during the First Quarter 2014, the Fourth Quarter 2014, or the First Quarter 2016.





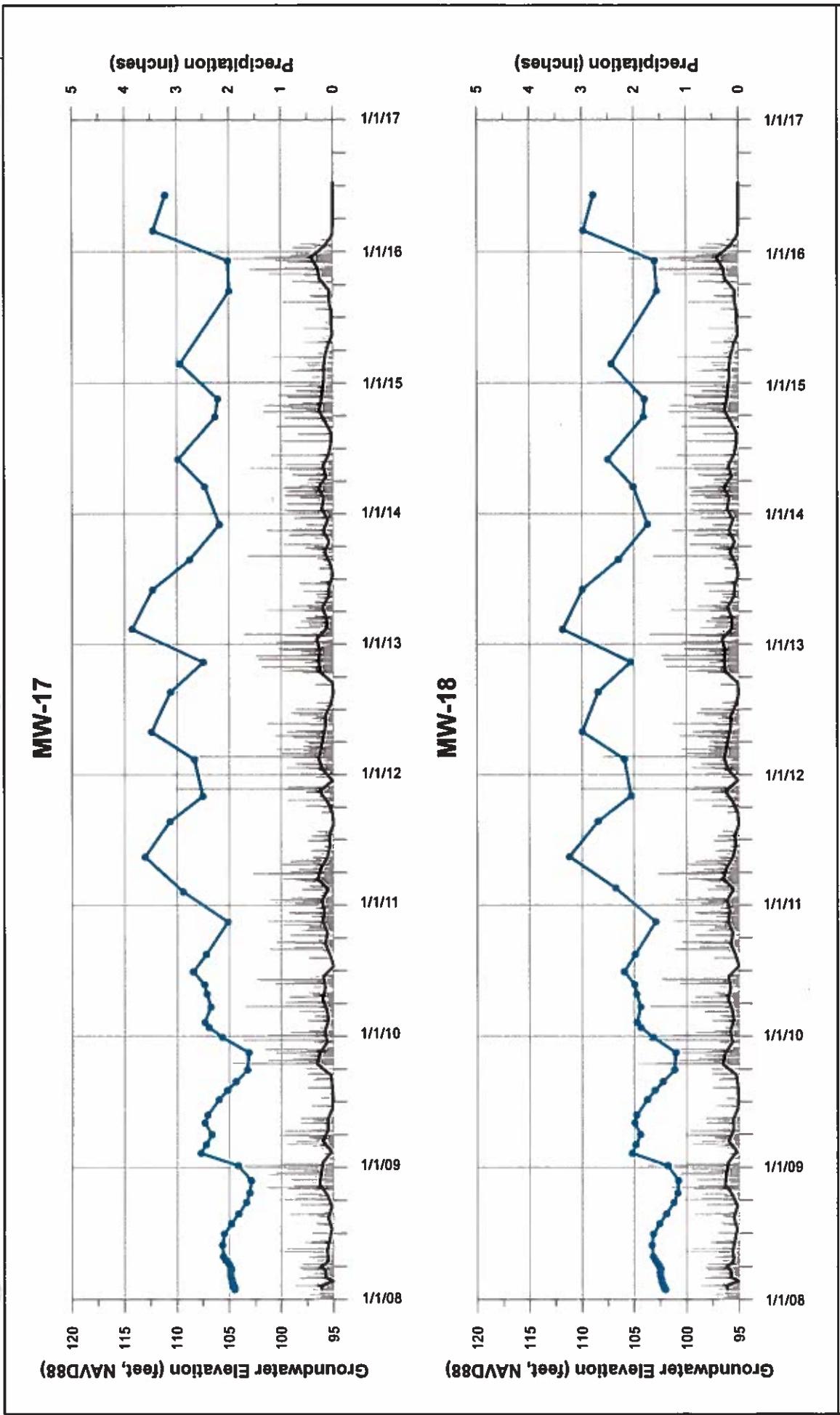
**FIGURE A-12**  
**MW-11 and MW-14 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



**FIGURE A-13**  
**MW-15 and MW-16 Hydrographs with Precipitation**  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington



**Notes:**  
 Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
 Precipitation includes rain and/or snow melt.  
 MW-15 measurement from the Second Quarter 2011 was suspected as incorrect and estimated by calculating the average elevation difference between MW-15 and MW-40 from the Third Quarter 2010 through the First Quarter 2011, and adding this difference to the Second Quarter 2011 groundwater elevation measured at MW-40.



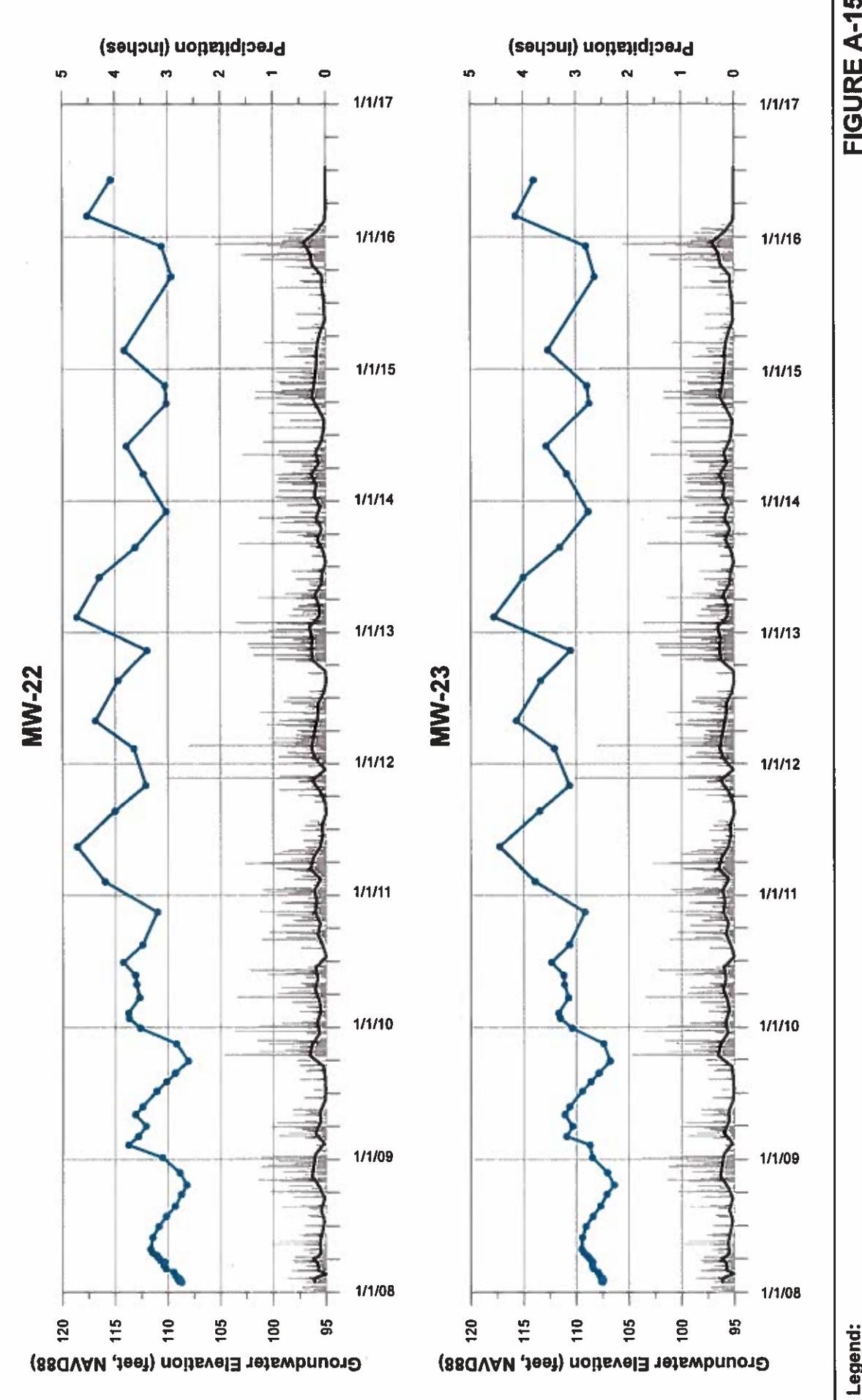
**FIGURE A-14**  
**MW-17 and MW-18 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Legend:**

- Groundwater Elevation
- Daily Precipitation
- Average Monthly Precipitation

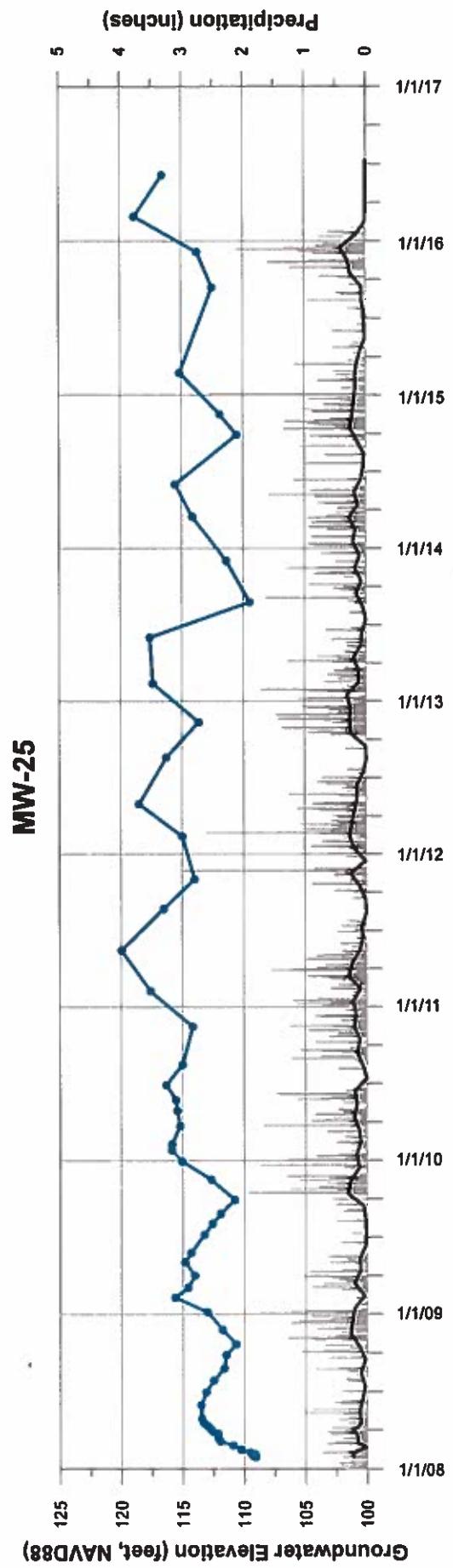
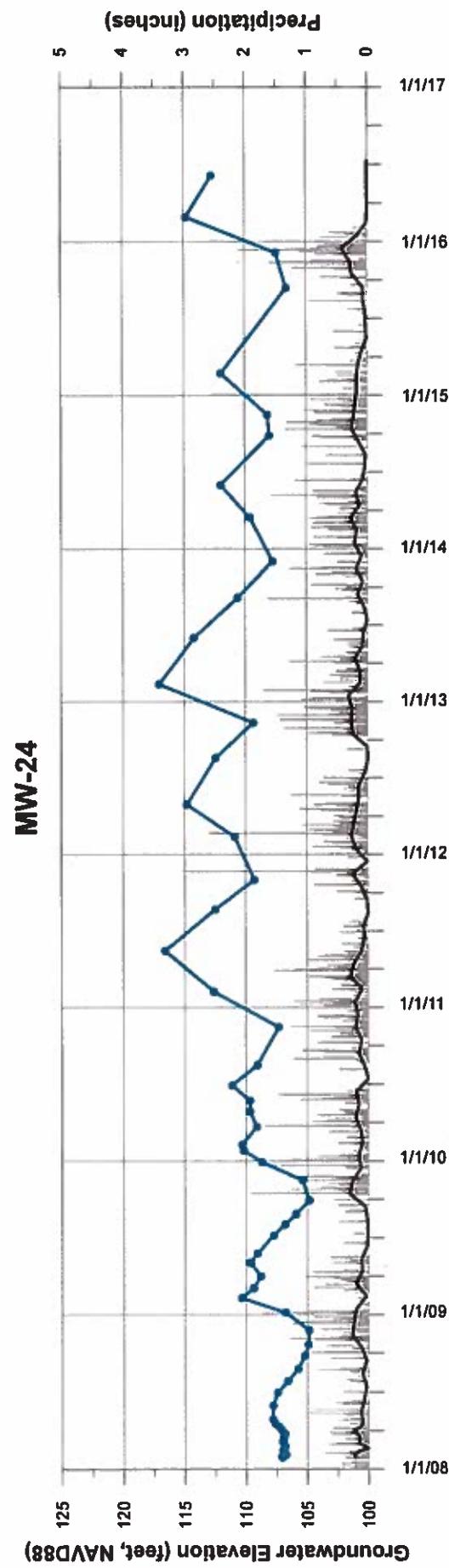
**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 460257.  
Precipitation includes rain and/or snow melt.





**FIGURE A-15**  
**MW-22 and MW-23 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington





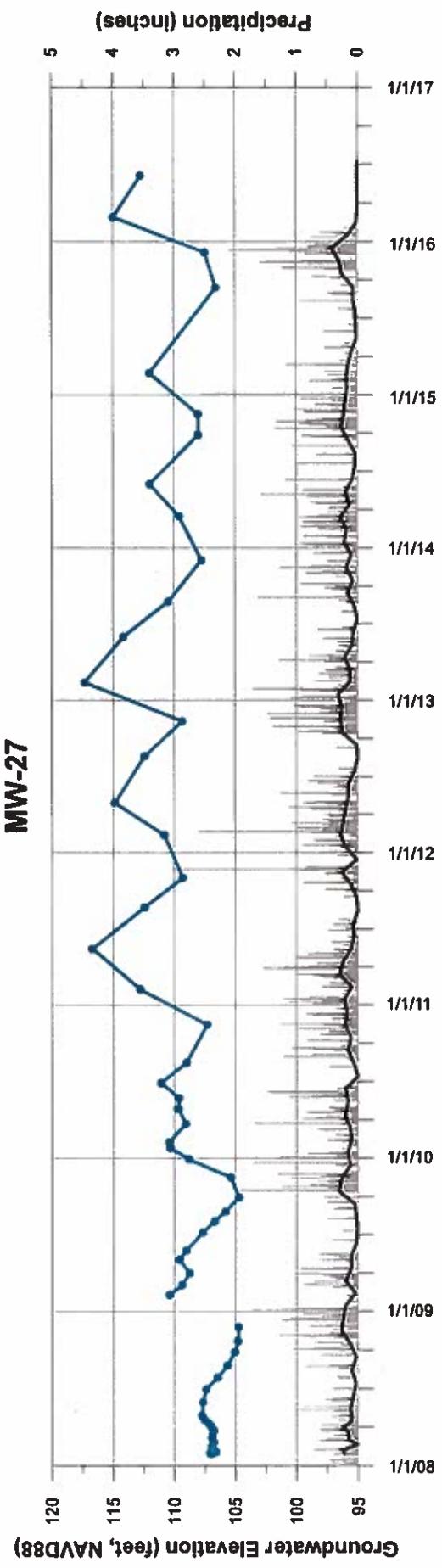
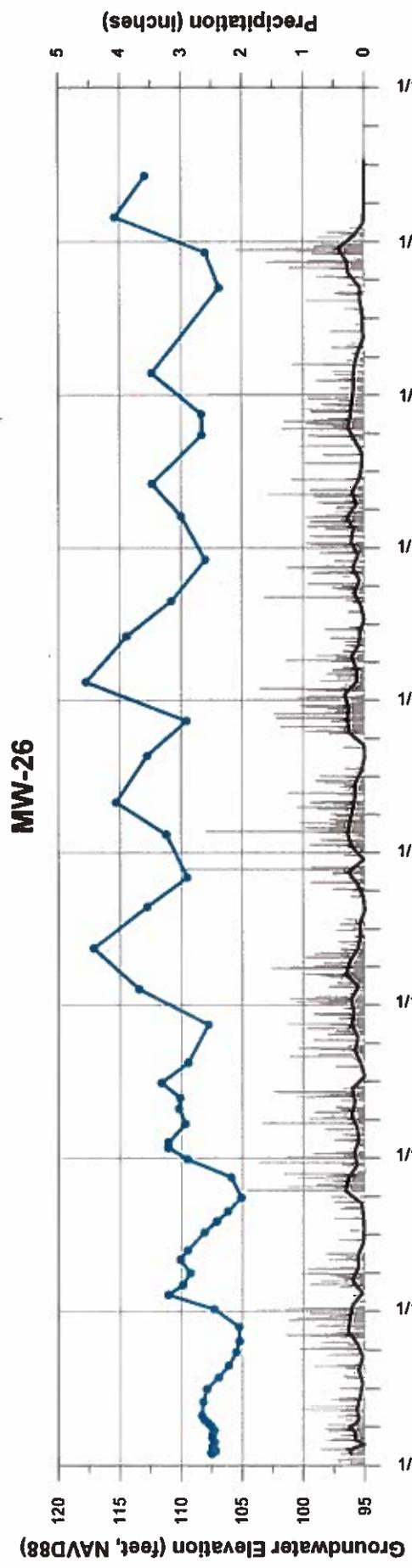
**Legend:**

- Groundwater Elevation
- Daily Precipitation
- Average Monthly Precipitation

**FIGURE A-16**  
**MW-24 and MW-25 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.





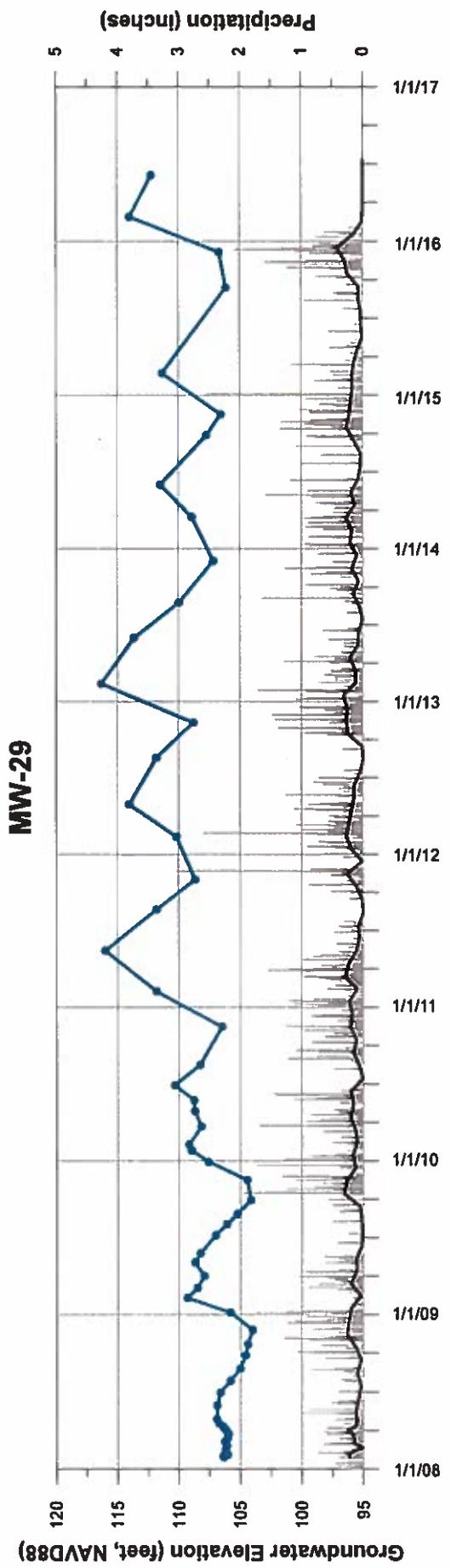
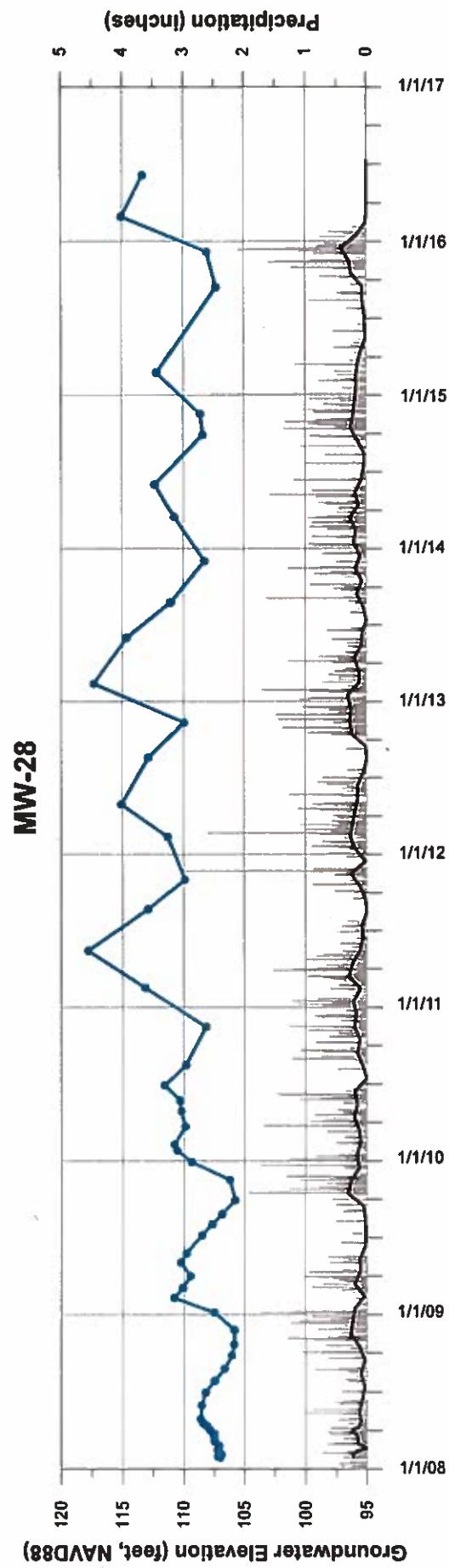
**Legend:**

- Groundwater Elevation
- Daily Precipitation
- Average Monthly Precipitation

**Notes:**  
 Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
 Precipitation includes rain and/or snow melt.  
 MW-27 was not measured in December 2008 due to high surface water conditions surrounding the well.

**FIGURE A-17**  
**MW-26 and MW-27 Hydrographs with Precipitation**  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington





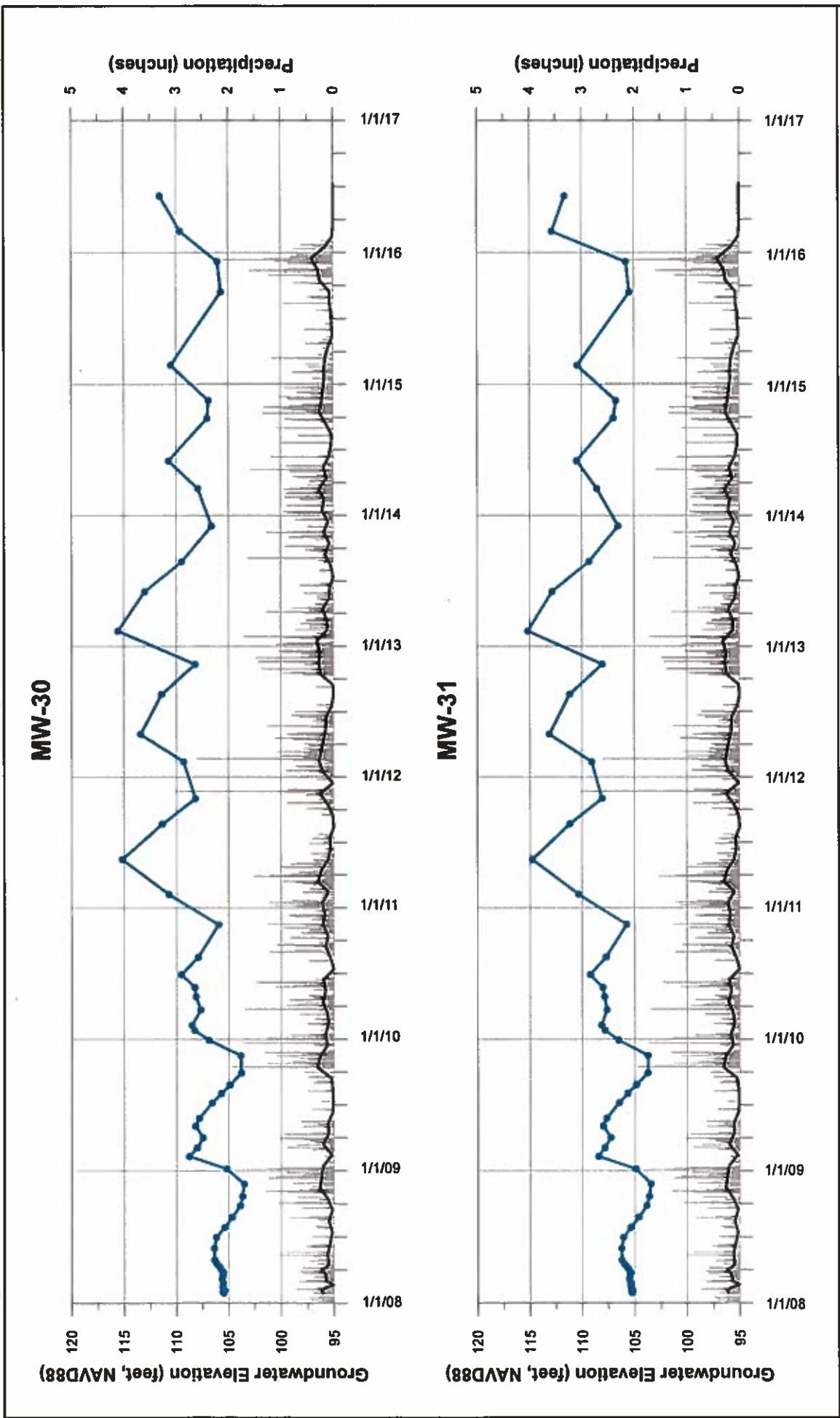
**FIGURE A-18**  
**MW-28 and MW-29 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Legend:**

- Groundwater Elevation
- Daily Precipitation
- Average Monthly Precipitation

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.



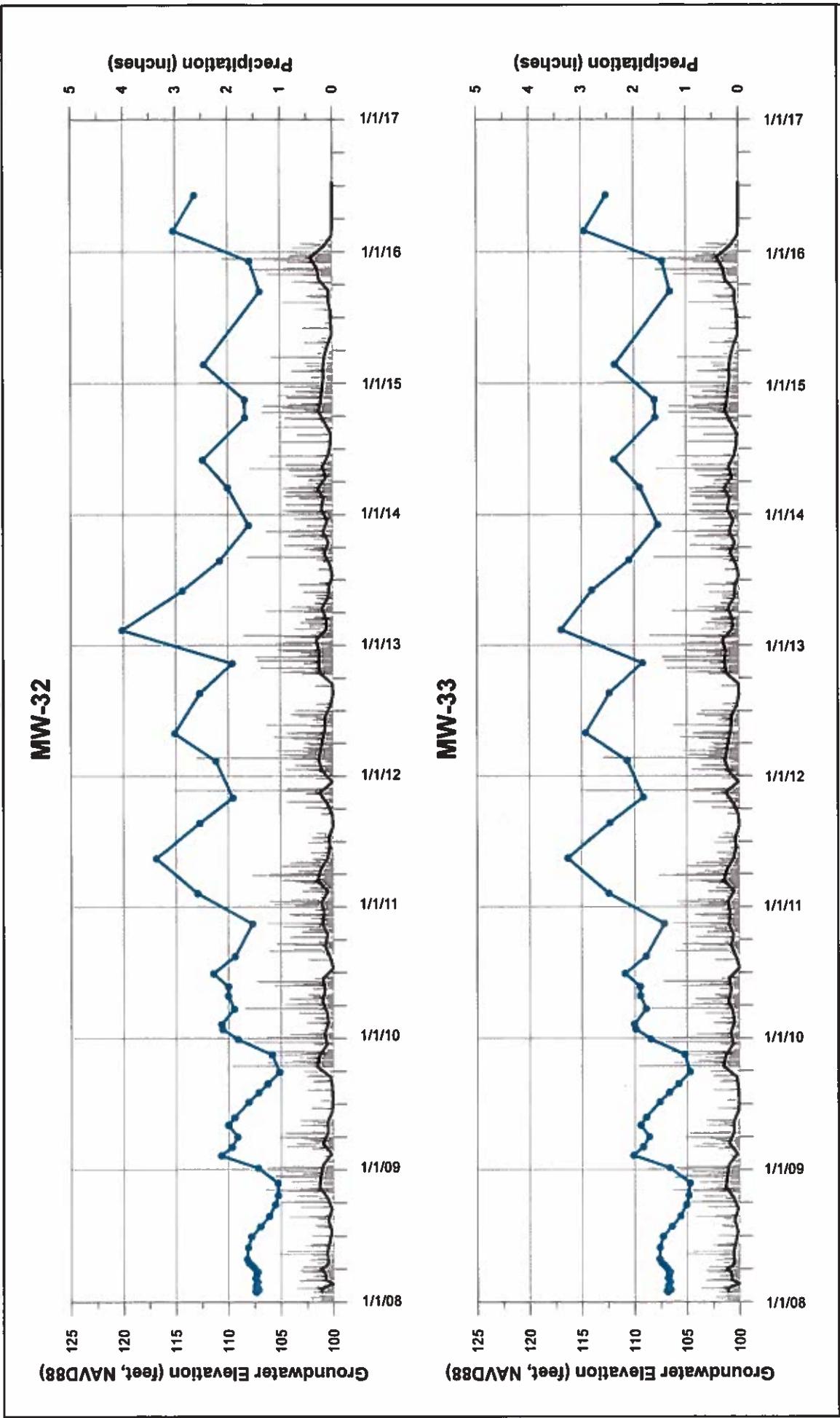


**FIGURE A-19**  
**MW-30 and MW-31 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.



GSI Water Solutions, Inc.



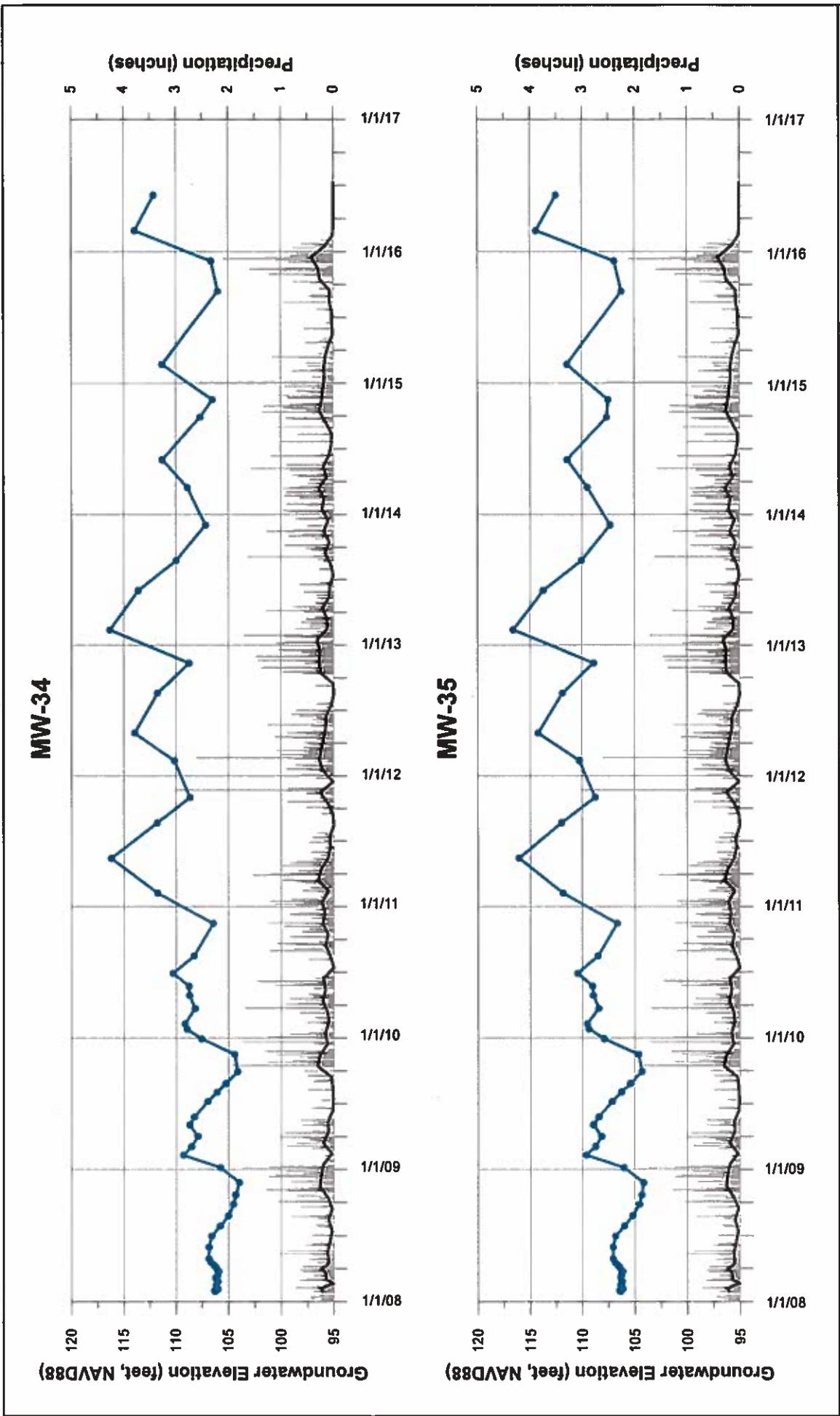
**FIGURE A-20**  
**MW-32 and MW-33 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Legend:**

- Groundwater Elevation
- Daily Precipitation
- Average Monthly Precipitation

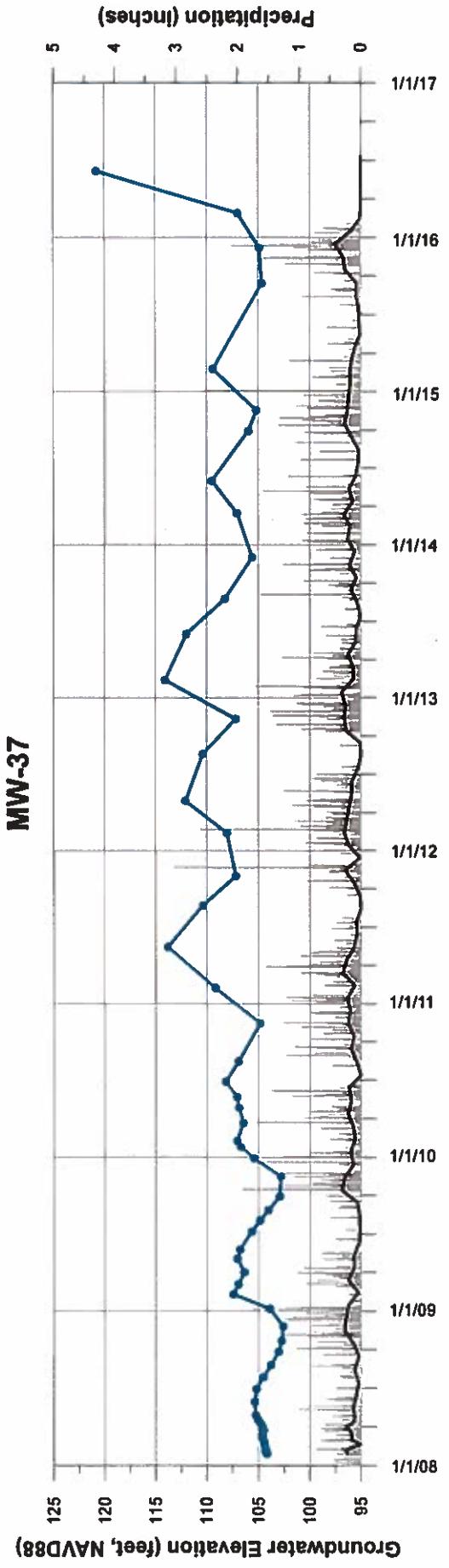
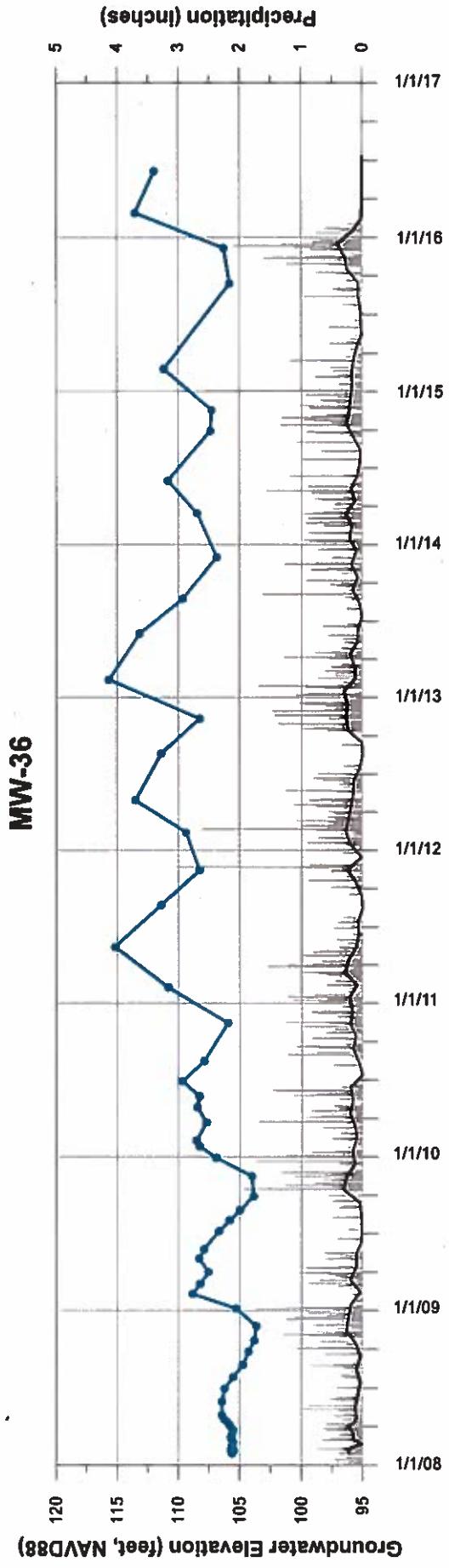
**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.





**FIGURE A-21**  
**MW-34 and MW-35 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



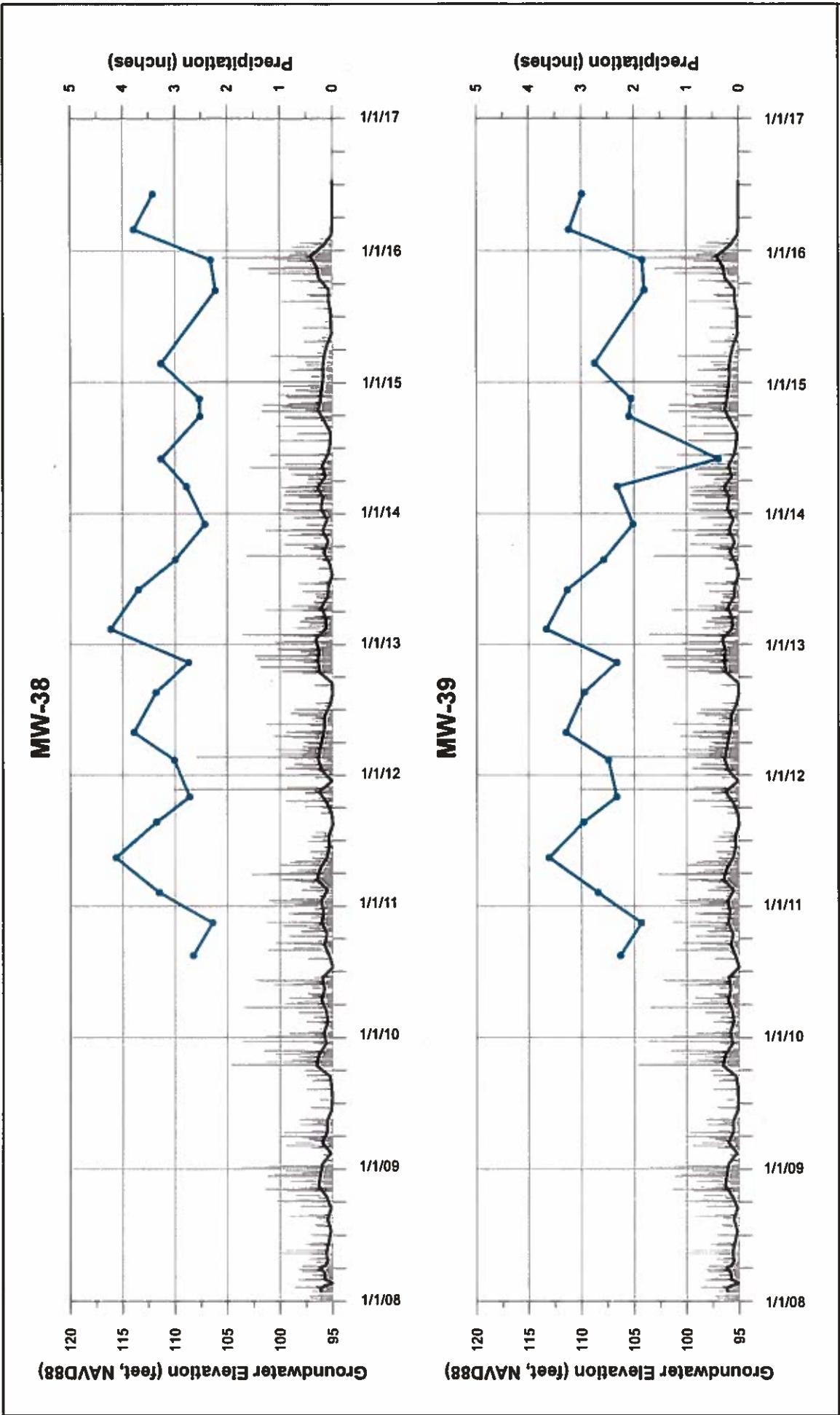


**FIGURE A-22**  
**MW-36 and MW-37 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC), Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.  
Suspect measurement at MW-37 in Second Quarter 2016.

**Legend:**  
● Groundwater Elevation  
■ Daily Precipitation  
— Average Monthly Precipitation

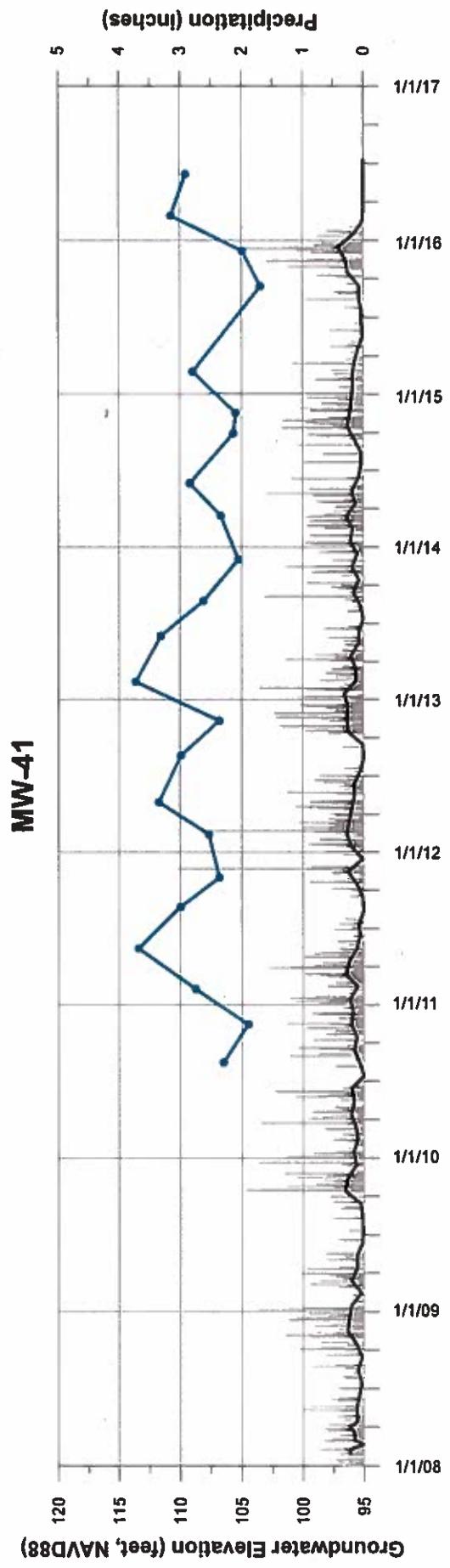
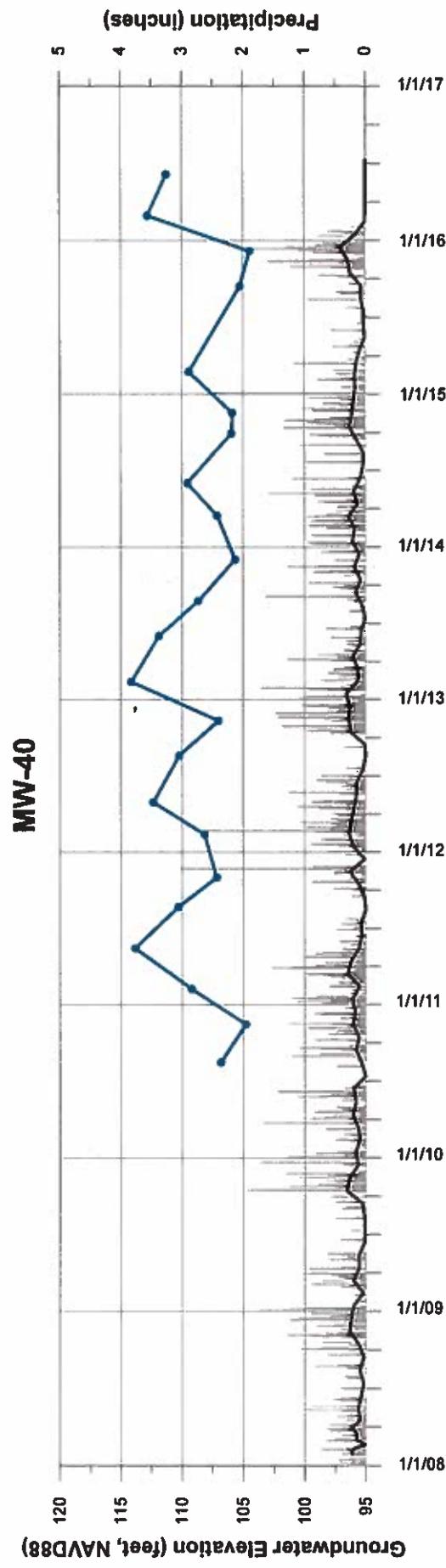




**FIGURE A-23**  
**MW-38 and MW-39 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.  
MW-38 and MW-39 constructed in July 2010.  
MW-39 measurement from Second Quarter 2014 is suspected to be a field error and is ten feet lower than the expected value.





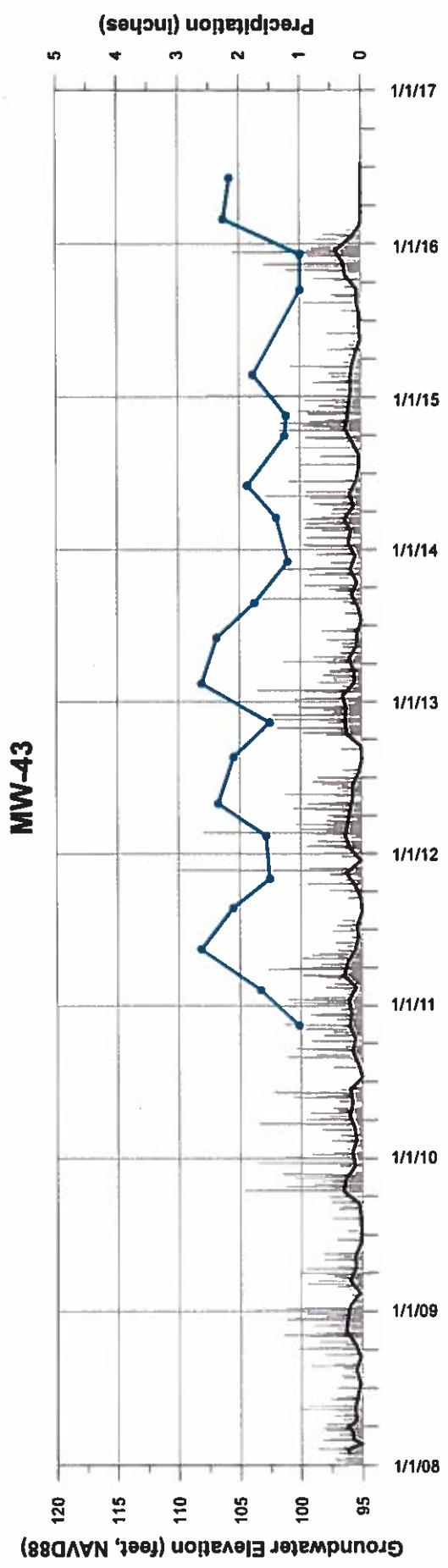
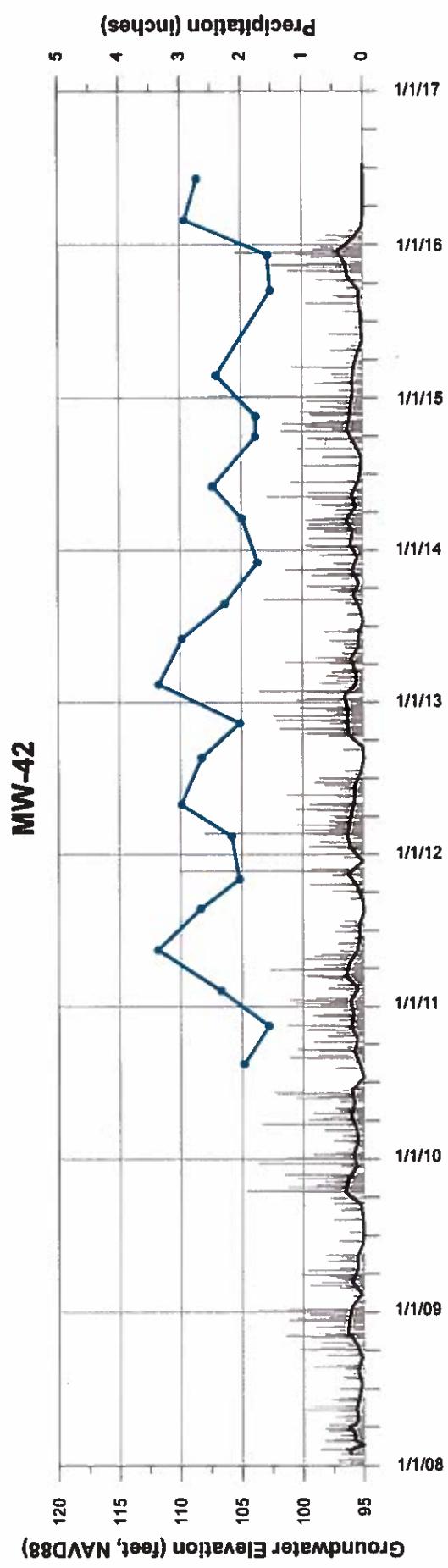
**FIGURE A-24**  
**MW-40 and MW-41 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Legend:**

- Groundwater Elevation (Blue Circle)
- Daily Precipitation (Grey Bar)
- Average Monthly Precipitation (Black Line)

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.  
MW-40 and MW-41 constructed in July 2010.





**FIGURE A-25**  
**MW-42 and MW-43 Hydrographs with Precipitation**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Legend:**

- Groundwater Elevation
- Daily Precipitation
- Average Monthly Precipitation

**Notes:**  
Precipitation data source is the National Climatic Data Center (NCDC) Arlington, Washington Station 450257.  
Precipitation includes rain and/or snow melt.  
MW-42 constructed in July 2010 and MW-43 constructed in October 2010.

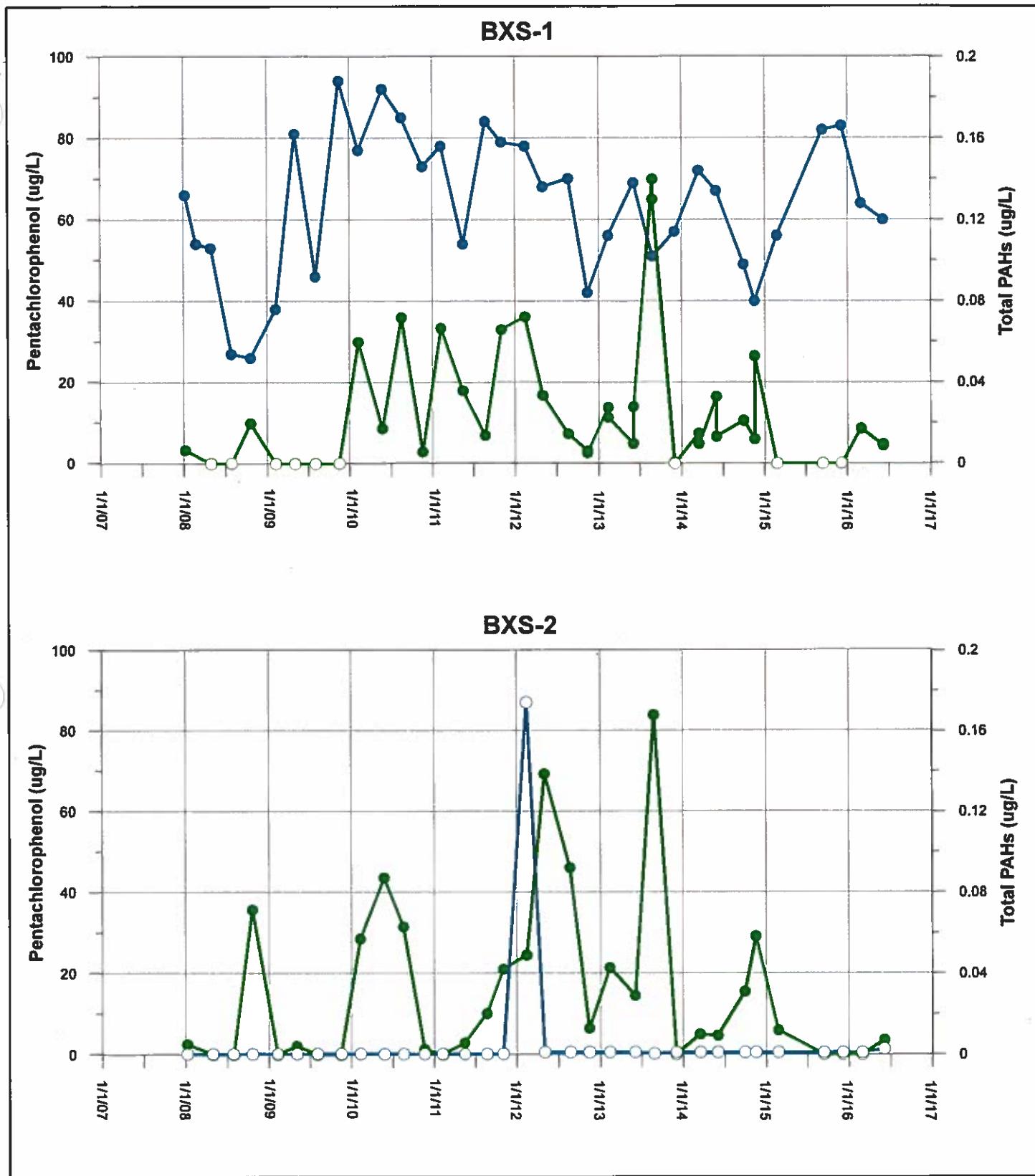


## **Appendix B**

**(provided on CD only)**

## **Appendix C**

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**Legend:**

- Pentachlorophenol Detected Values
  - Pentachlorophenol Non-Detected Values
  - Total PAHs Detected Values
  - Total PAHs Non-Detected Values

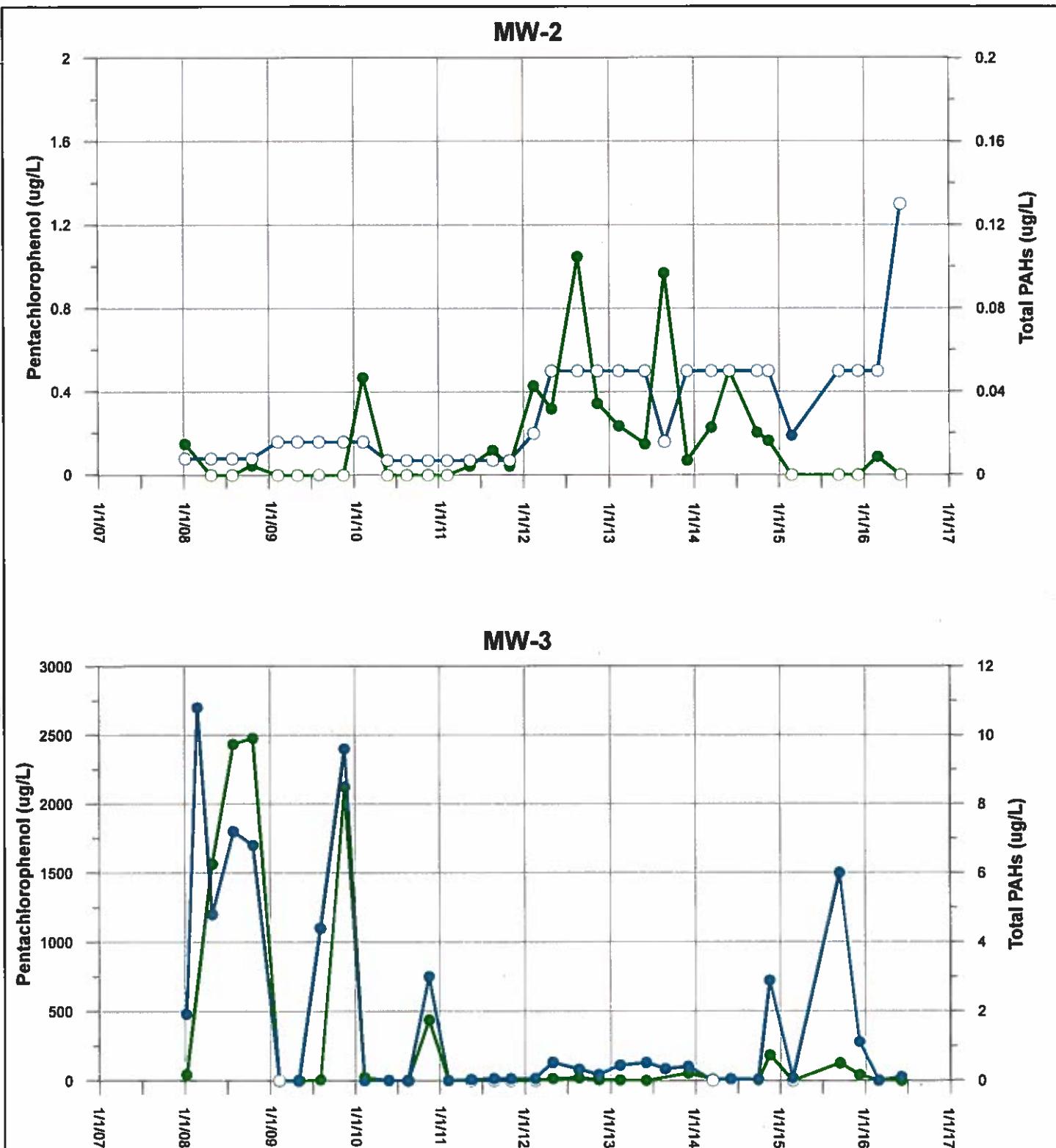
#### **Notes:**

**Notes:**

Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0).

**FIGURE C-1**  
**Pentachlorophenol and Total PAHs Groundwater Concentrations in BXS-1 and BXS-2  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington**





**Legend:**

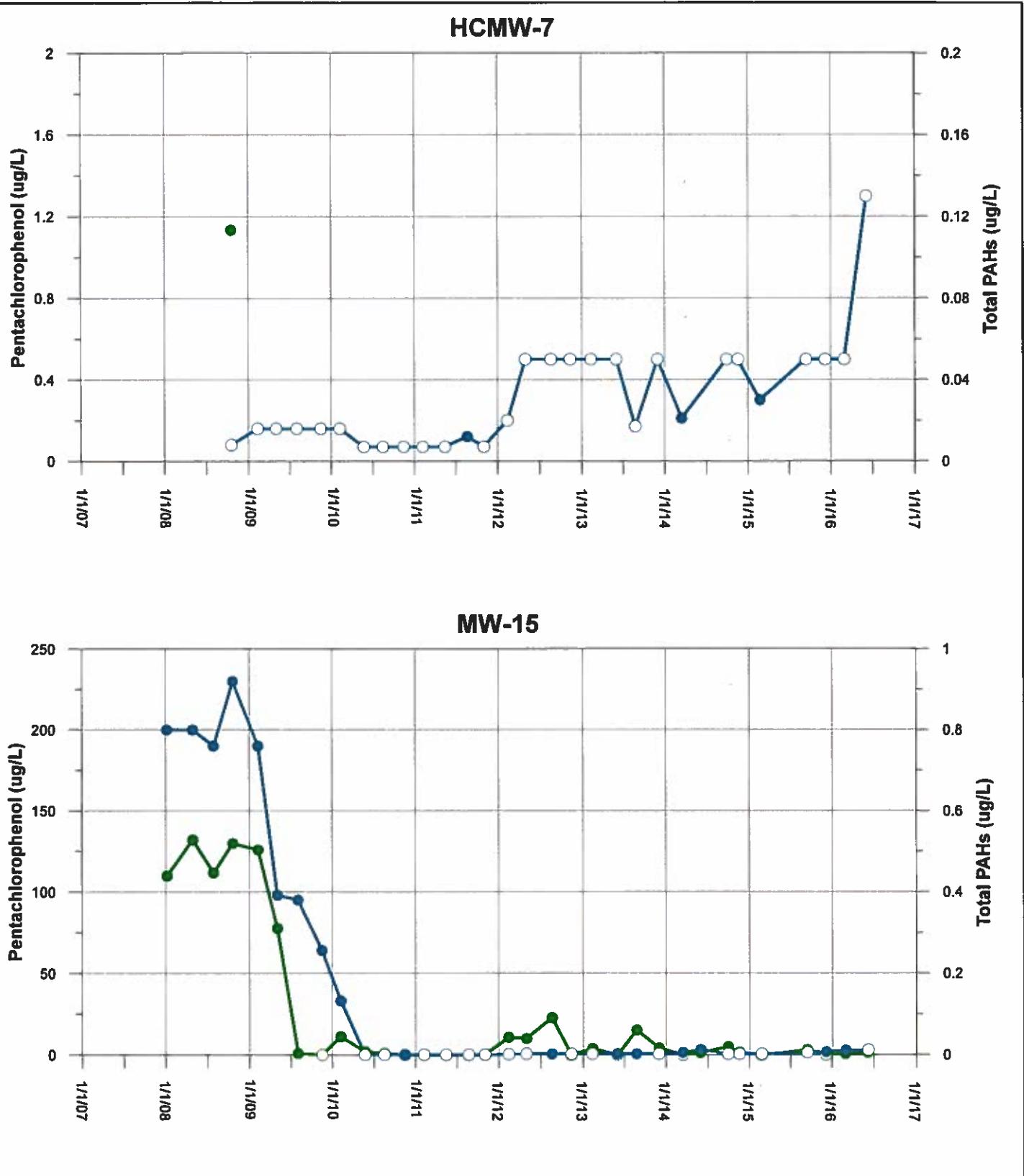
- Pentachlorophenol Detected Values
- Pentachlorophenol Non-Detected Values
- Total PAHs Detected Values
- Total PAHs Non-Detected Values

**Notes:**

ug/L = microgram per liter

Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0).

**FIGURE C-2**  
**Pentachlorophenol and Total PAHs Groundwater Concentrations in MW-2 and MW-3**  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington



---

**Legend:**

- Pentachlorophenol Detected Values
  - Pentachlorophenol Non-Detected Values
  - Total PAHs Detected Values
  - Total PAHs Non-Detected Values

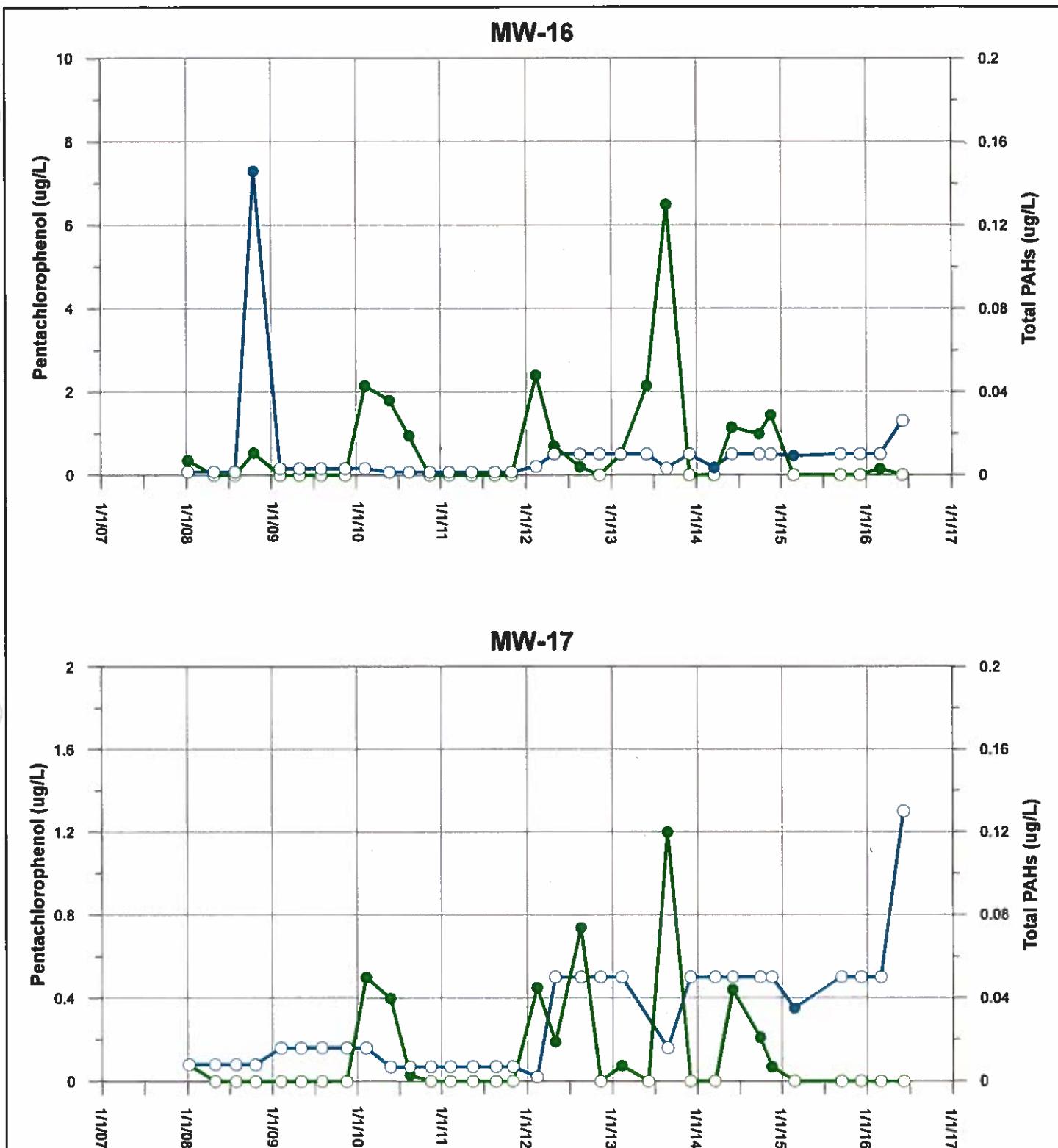
#### **Notes:**

**Notes:**  
ug/L = microgram per liter

Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0).

**FIGURE C-3**





**Legend:**

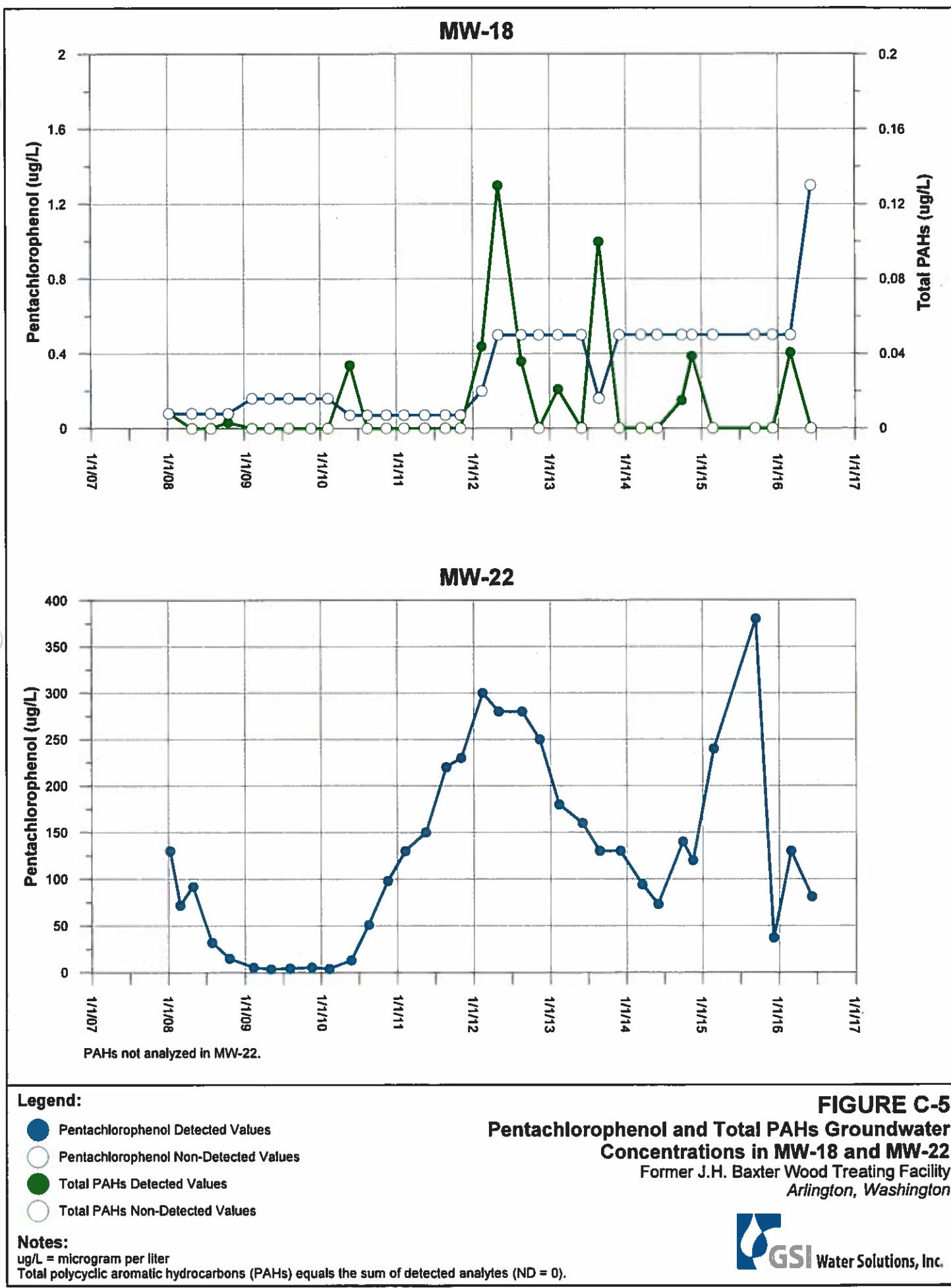
- Pentachlorophenol Detected Values
- Pentachlorophenol Non-Detected Values
- Total PAHs Detected Values
- Total PAHs Non-Detected Values

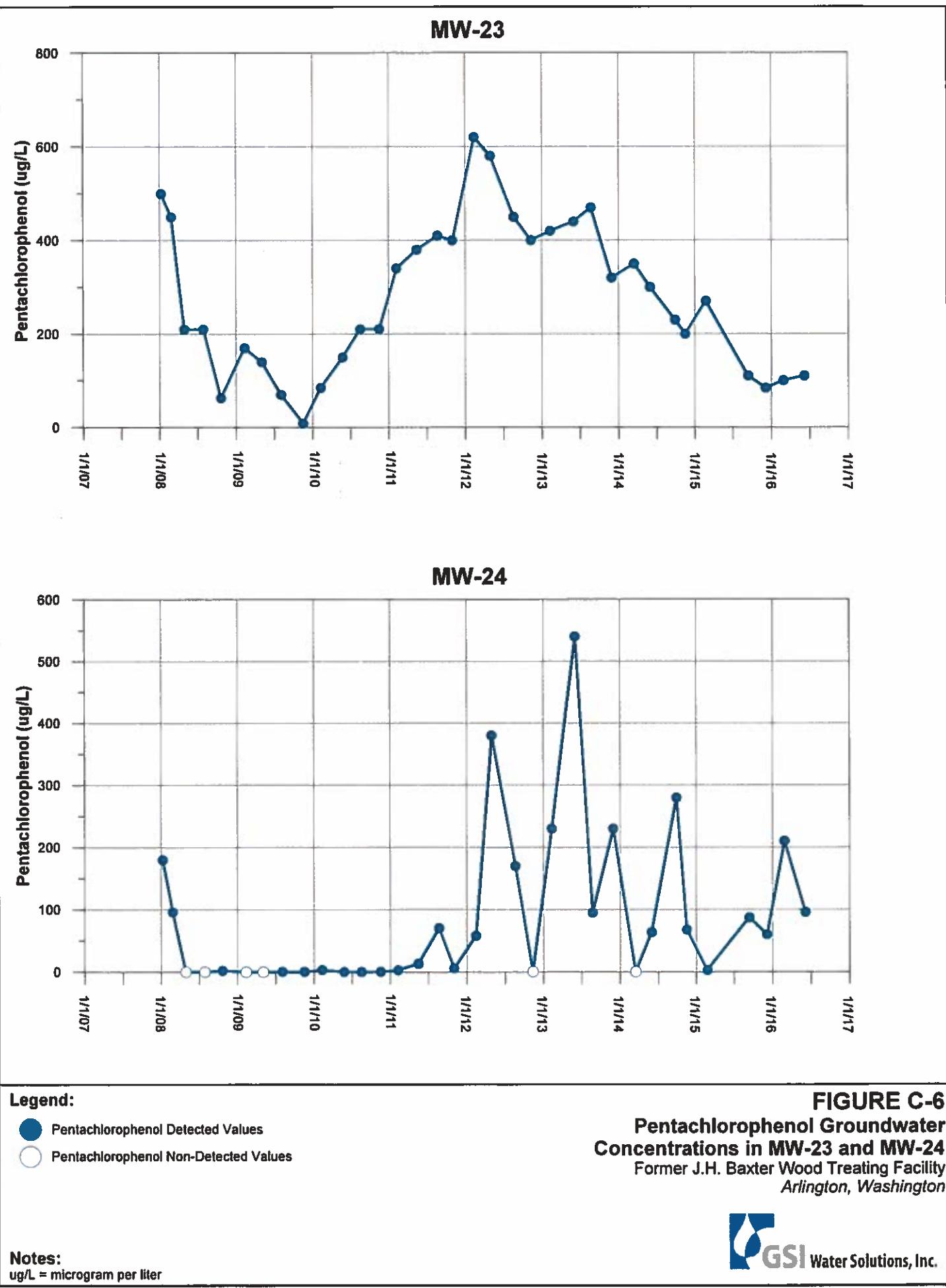
**Notes:**

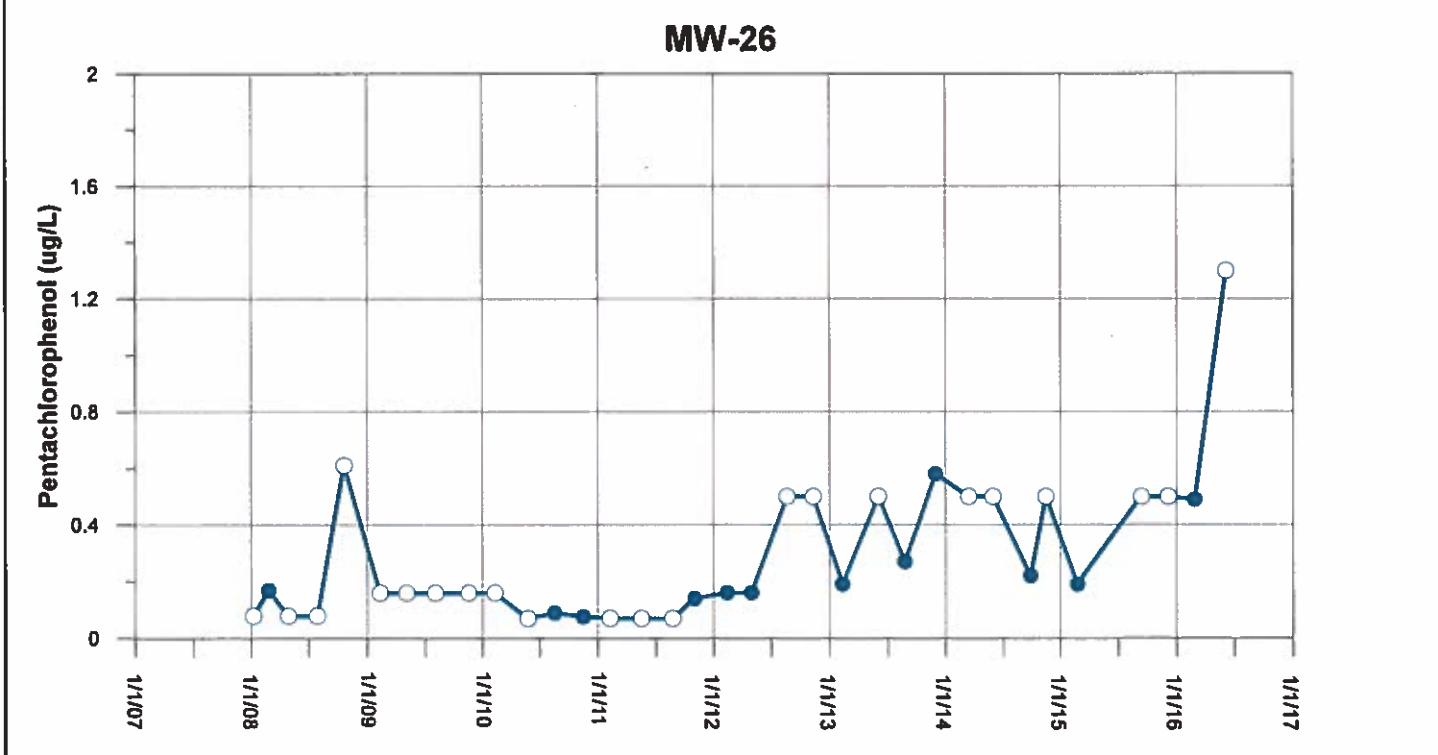
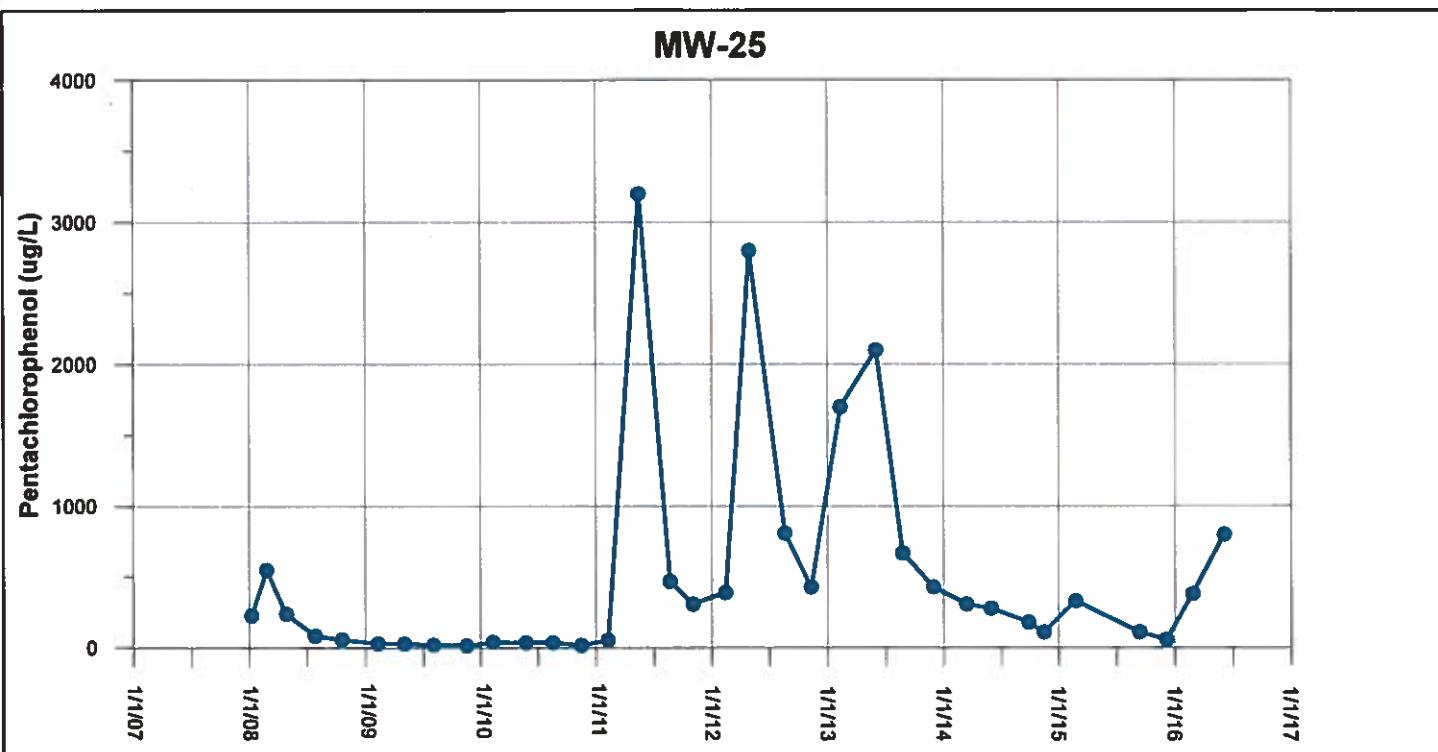
ug/L = microgram per liter

Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0).

**FIGURE C-4**  
**Pentachlorophenol and Total PAHs Groundwater Concentrations in MW-16 and MW-17**  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington







**Legend:**

-  Pentachlorophenol Detected Values
  -  Pentachlorophenol Non-Detected Values

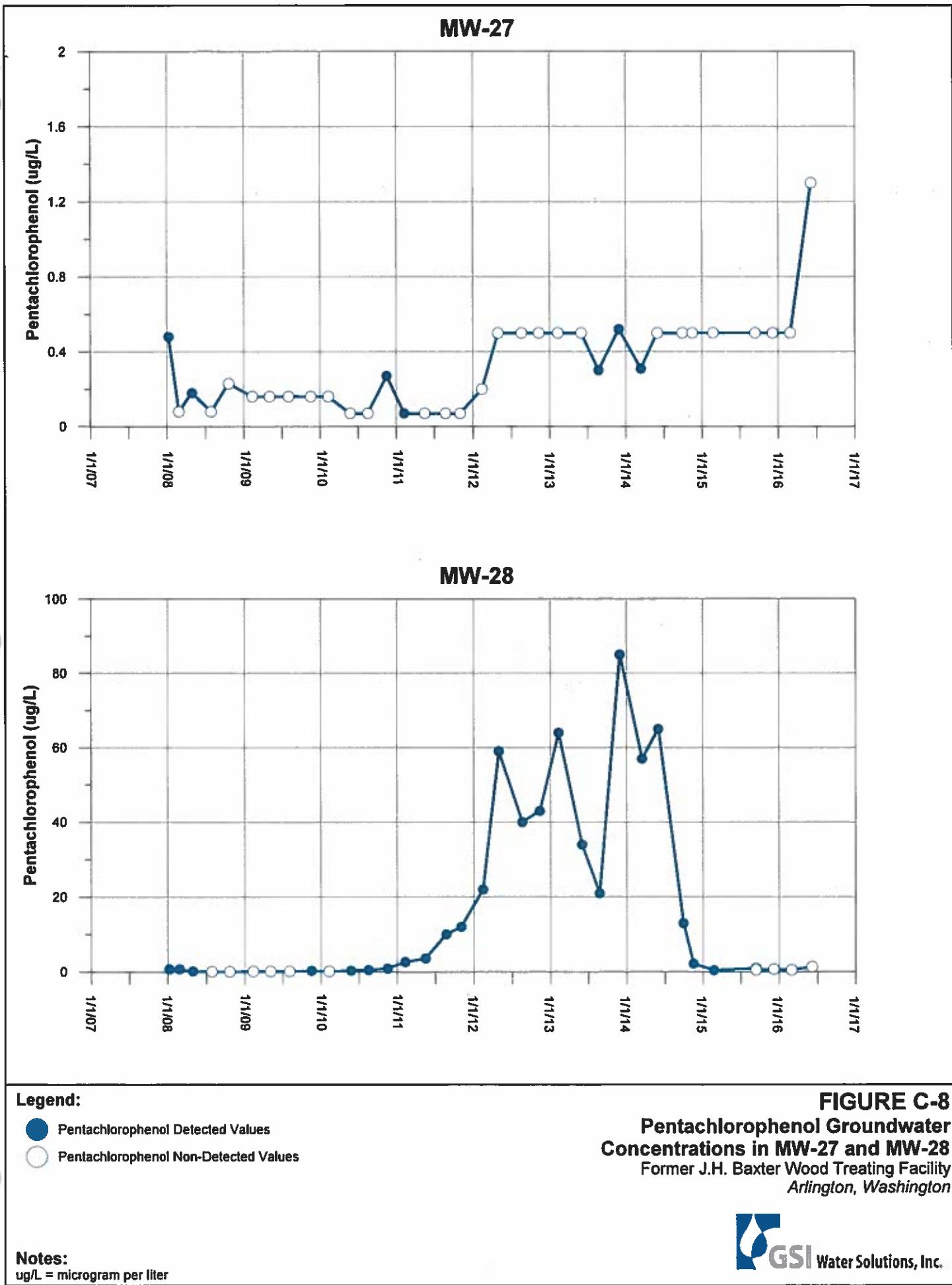
### **Notes:**

**ug/L = microgram per liter**

**FIGURE C-7**

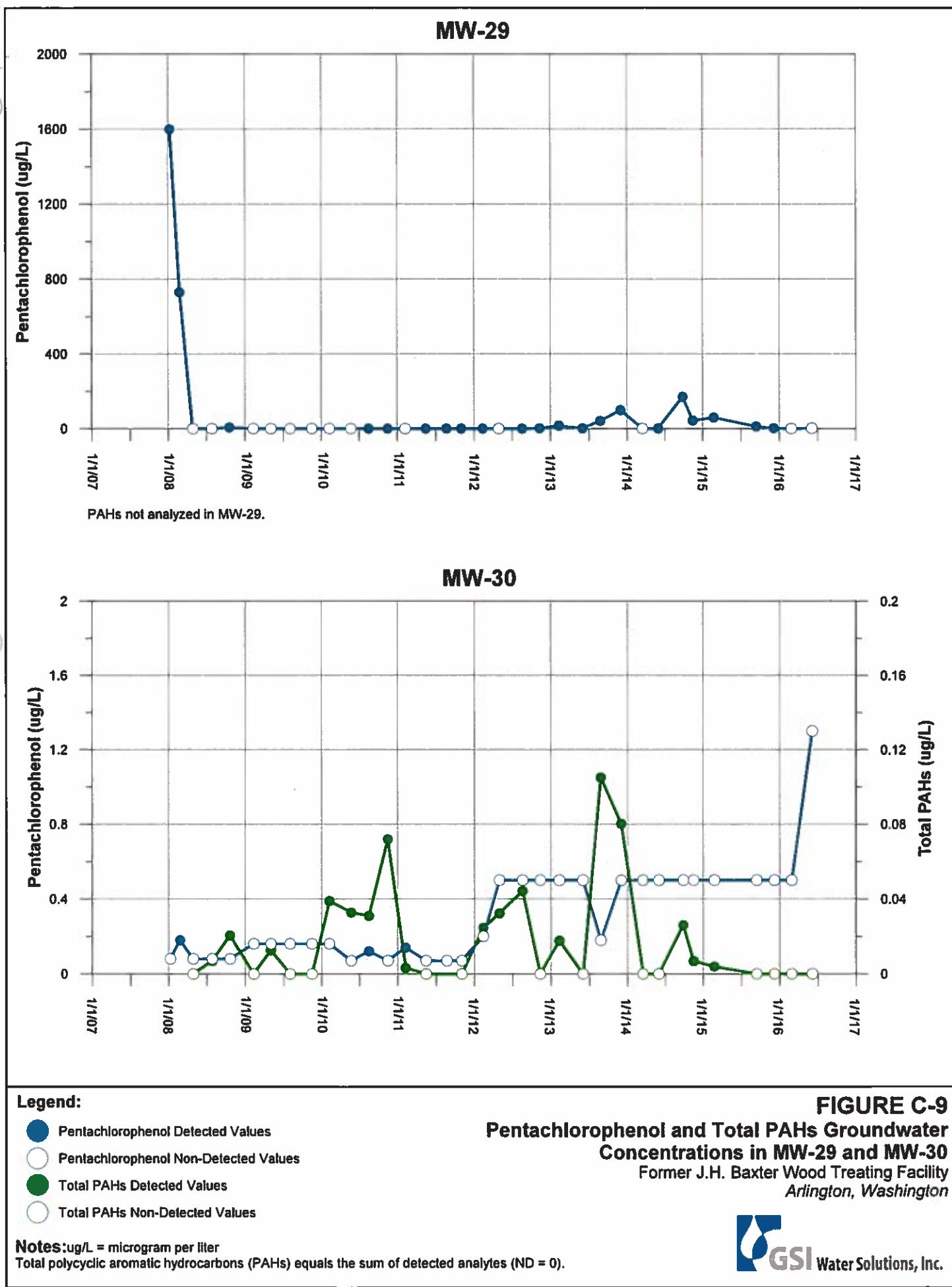
**Pentachlorophenol Groundwater Concentrations in MW-25 and MW-26  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington**

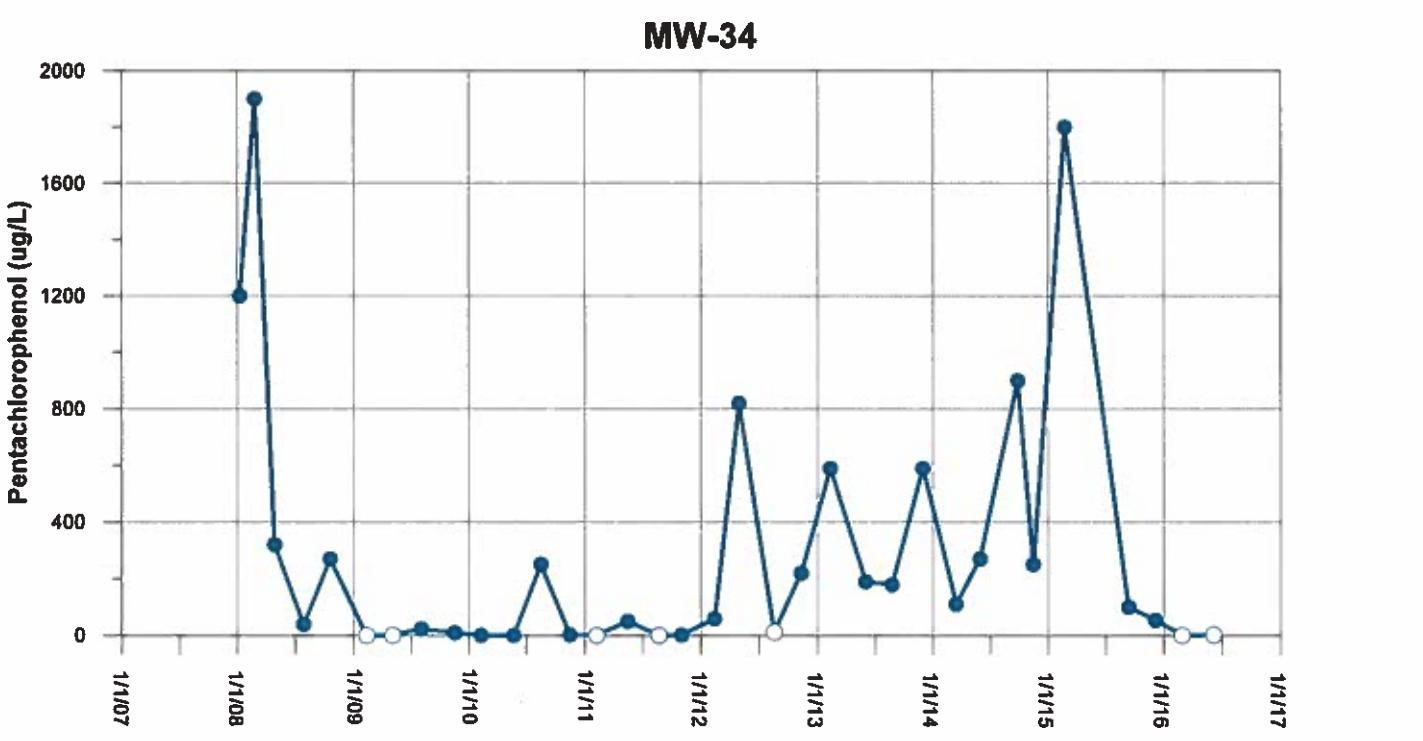
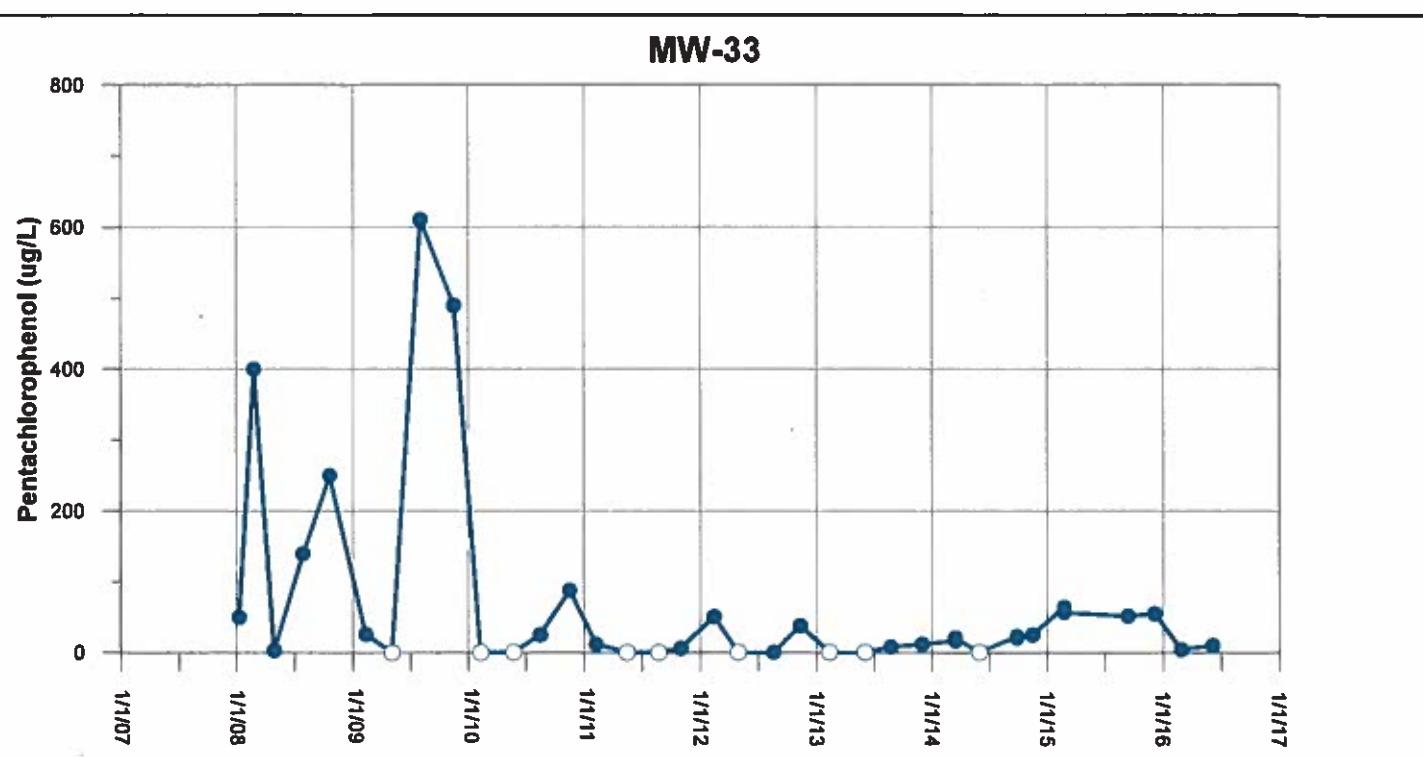




**FIGURE C-8**  
**Pentachlorophenol Groundwater Concentrations in MW-27 and MW-28**  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington







**Legend:**

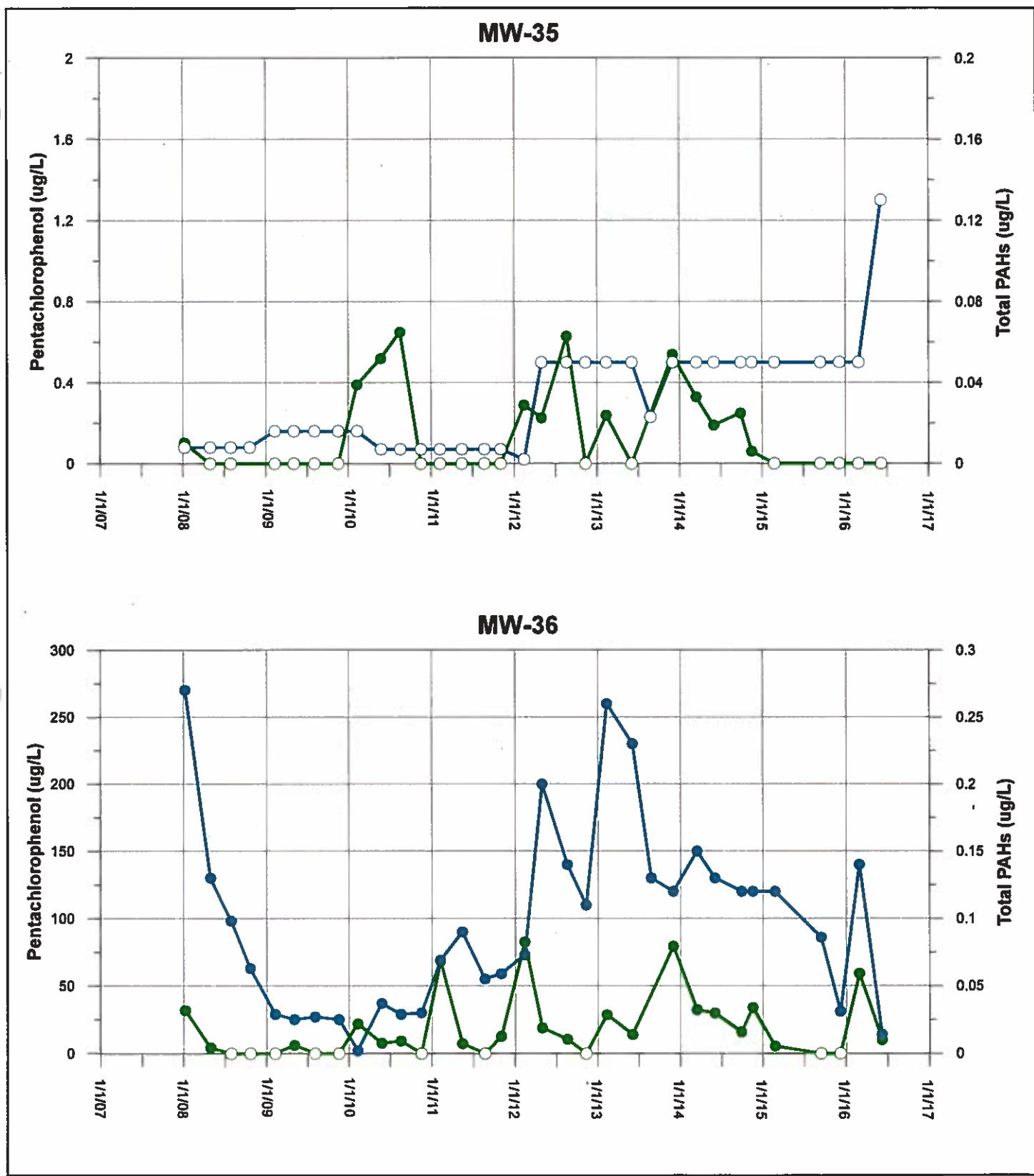
-  Pentachlorophenol Detected Values  
 Pentachlorophenol Non-Detected Values

## **Notes:**

**ug/L = microgram per liter**

**FIGURE C-11**  
**Pentachlorophenol Groundwater  
 Concentrations in MW-33 and MW-34  
 Former J.H. Baxter Wood Treating Facility  
*Arlington, Washington***





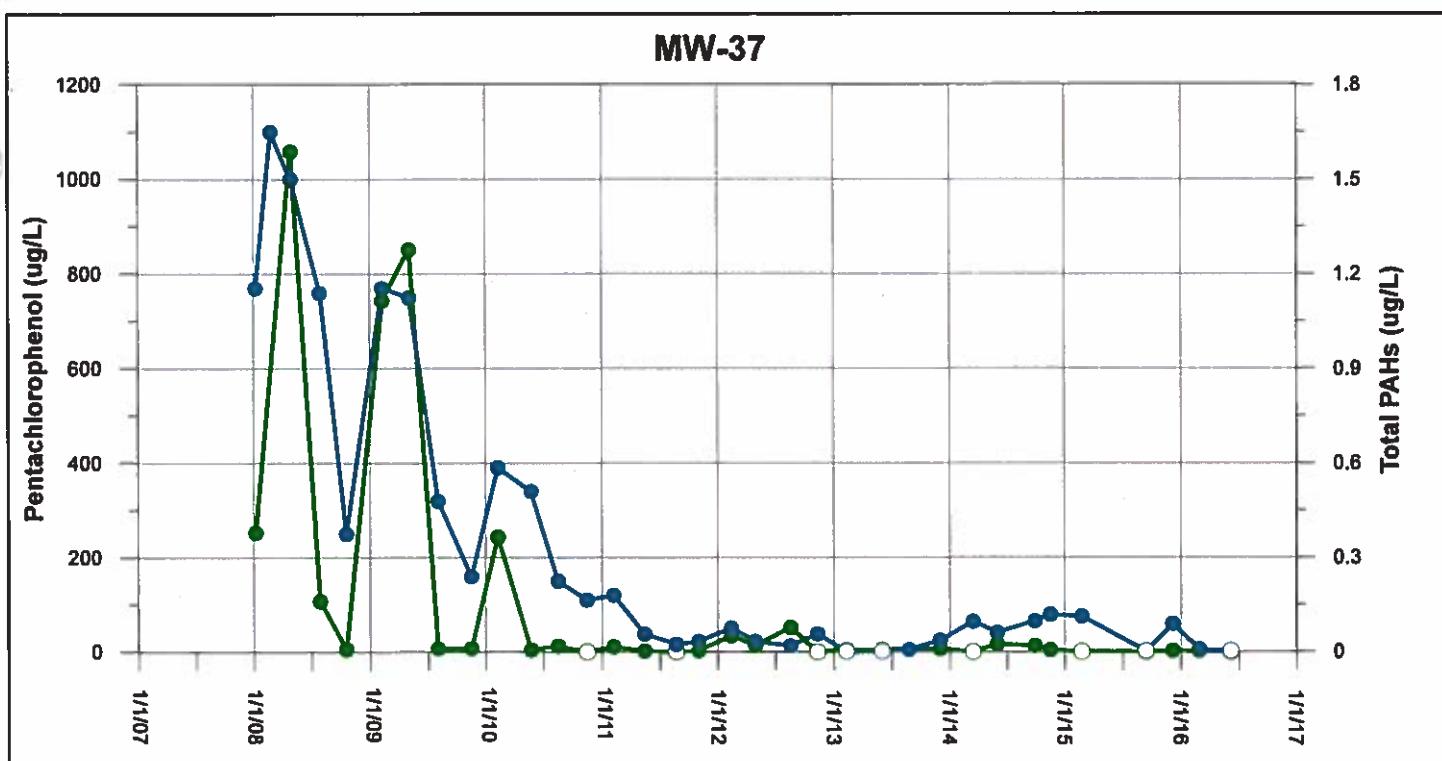
**Legend:**

- Pentachlorophenol Detected Values
- Pentachlorophenol Non-Detected Values
- Total PAHs Detected Values
- Total PAHs Non-Detected Values

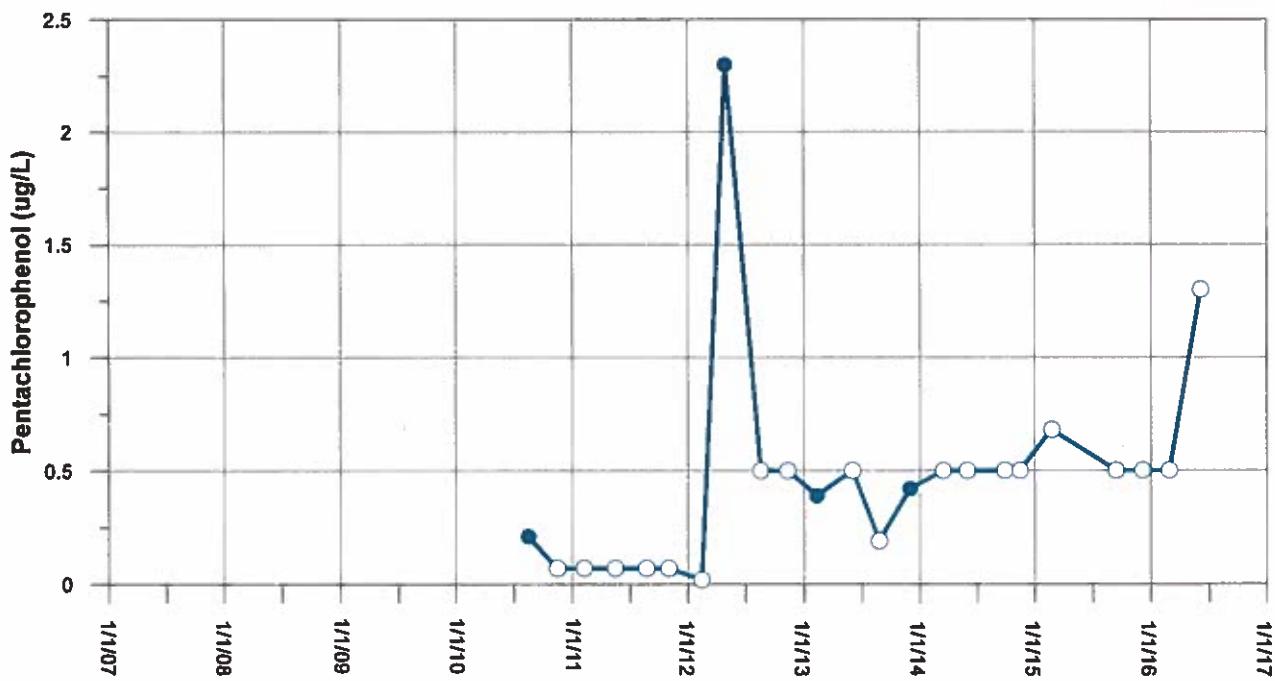
**Notes:**

ug/L = microgram per liter  
Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0).

**FIGURE C-12**  
**Pentachlorophenol and Total PAHs Groundwater Concentrations in MW-35 and MW-36**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington



**MW-38**



PAHs not analyzed in MW-38.

**Legend:**

- Pentachlorophenol Detected Values
- Pentachlorophenol Non-Detected Values
- Total PAHs Detected Values
- Total PAHs Non-Detected Values

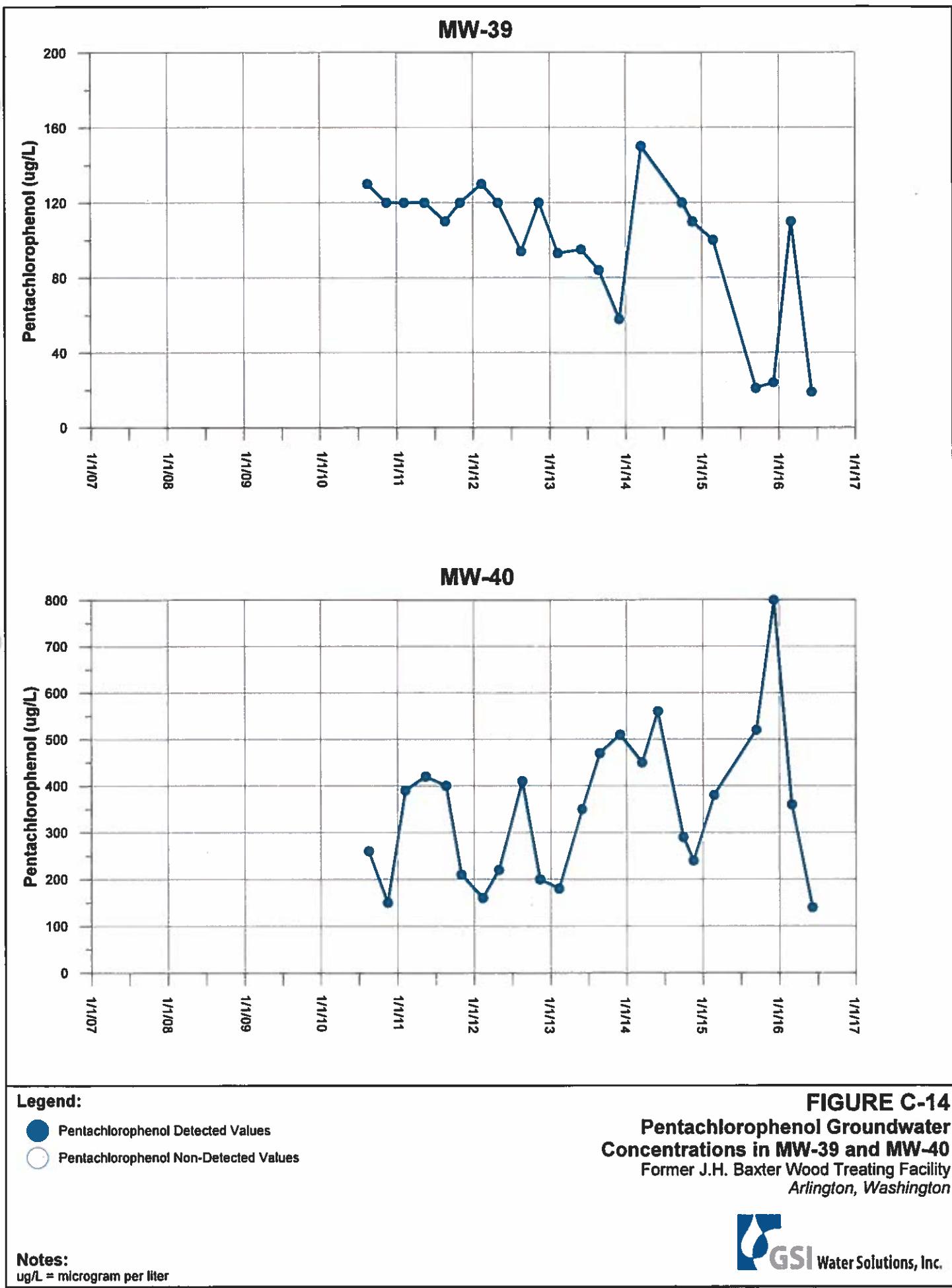
**Notes:**

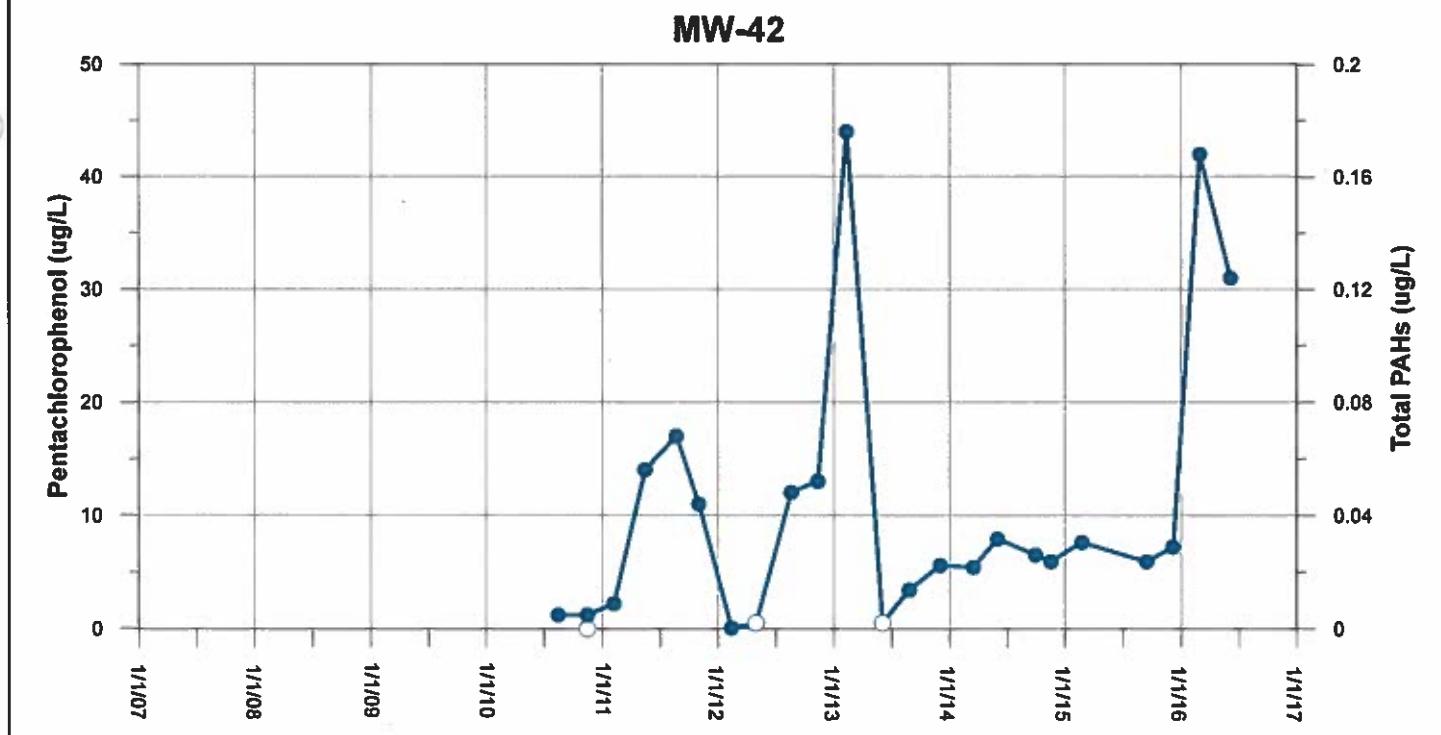
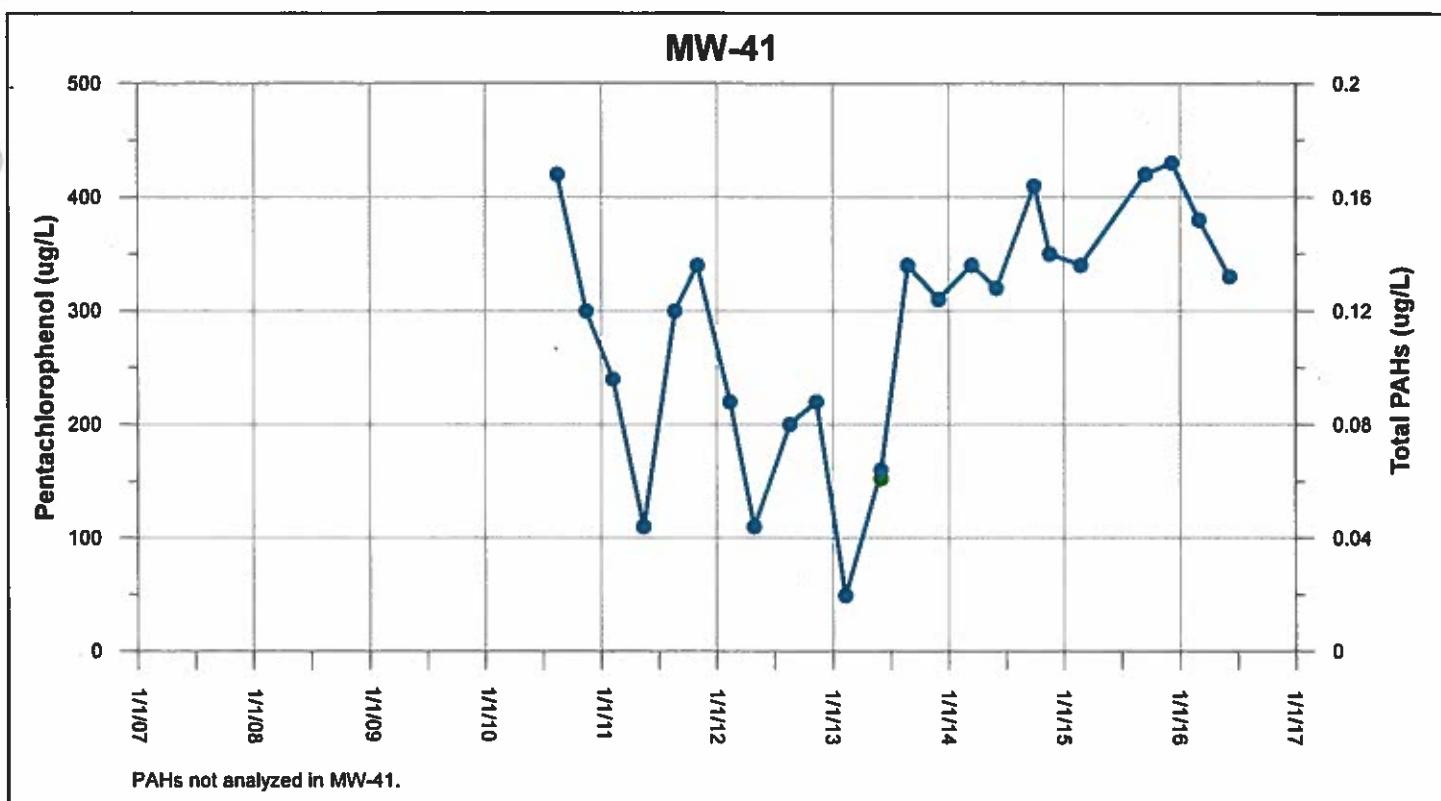
µg/L = microgram per liter

Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0).

**FIGURE C-13**  
**Pentachlorophenol and Total PAHs Groundwater Concentrations in MW-37 and MW-38**  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington







**Legend:**

- Pentachlorophenol Detected Values
- Pentachlorophenol Non-Detected Values
- Total PAHs Detected Values
- Total PAHs Non-Detected Values

**Notes:**

ug/L = microgram per liter

Total polycyclic aromatic hydrocarbons (PAHs) equals the sum of detected analytes (ND = 0).

**FIGURE C-15**  
**Pentachlorophenol and Total PAHs Groundwater Concentrations in MW-41 and MW-42**  
**Former J.H. Baxter Wood Treating Facility**  
**Arlington, Washington**





**Legend:**

- Pentachlorophenol Detected Values
  - Pentachlorophenol Non-Detected Values

## **Notes:**

**ug/L = microgram per liter**

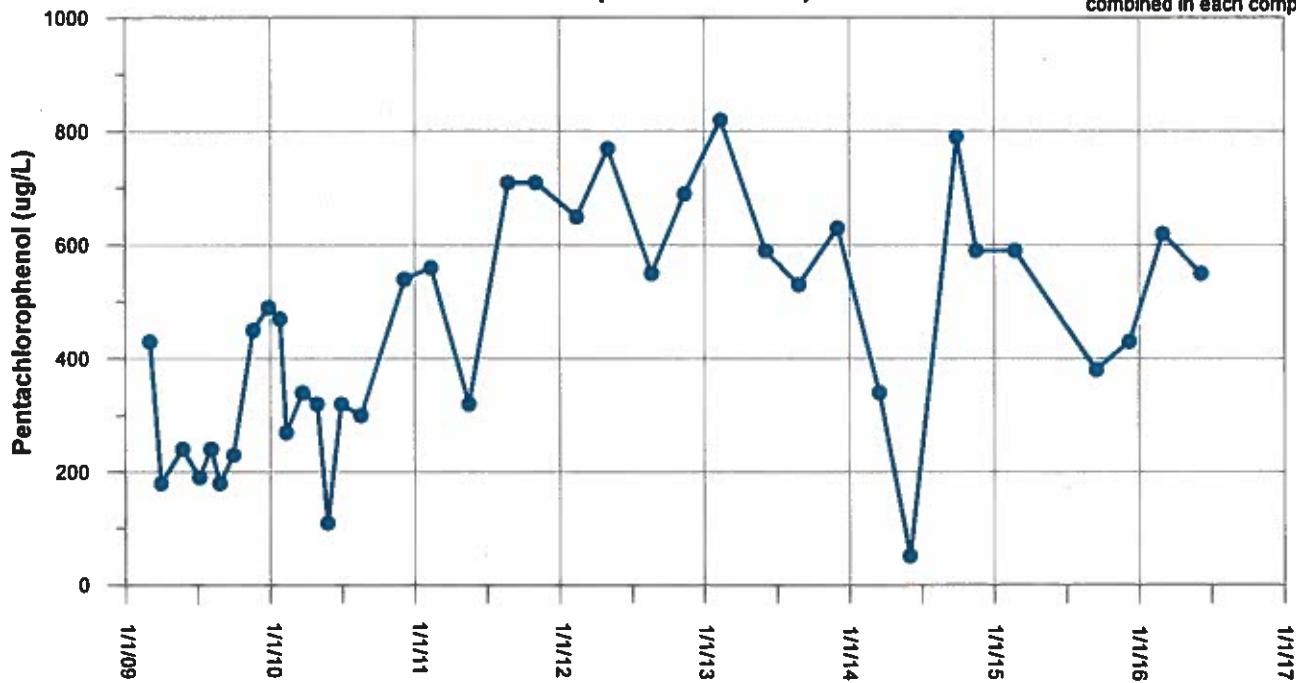
**FIGURE C-16**

**Pentachlorophenol Groundwater Concentrations in MW-43  
Former J.H. Baxter Wood Treating Facility  
Arlington, Washington**

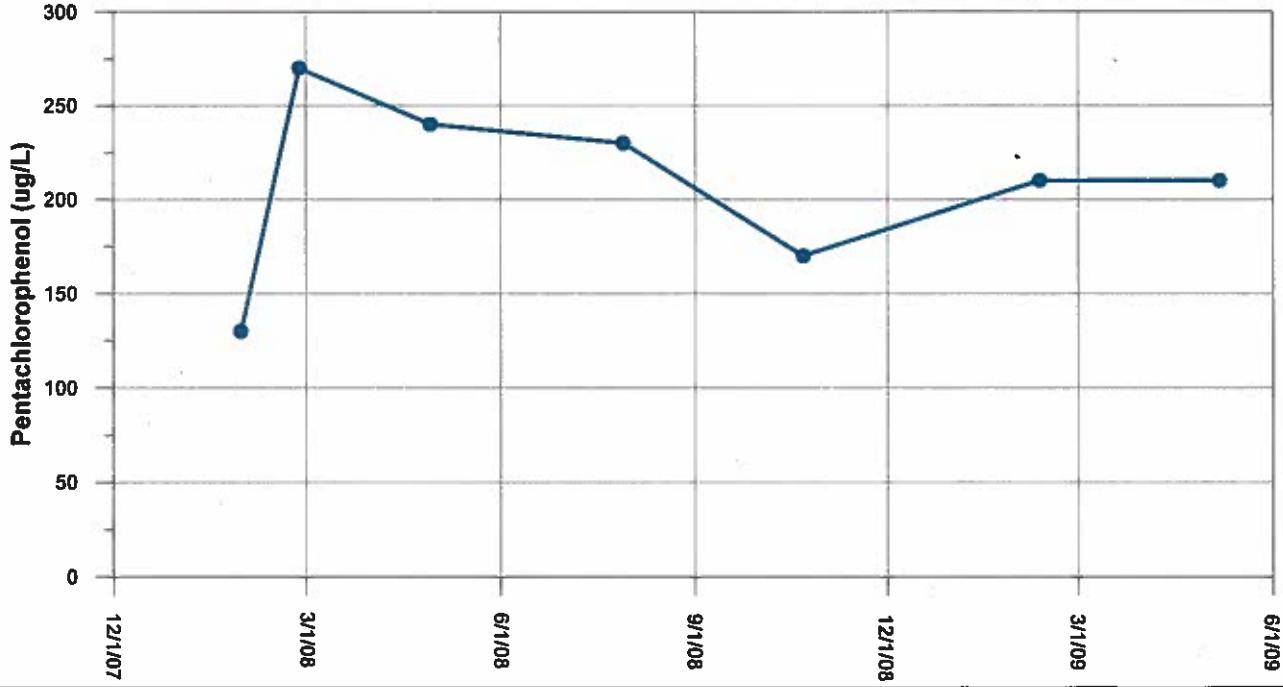


**Extraction Well Composites**  
**EPA Method 8270D and 8151M**  
**(2009 - current)**

See Table 4C for extraction wells combined in each composite sample.



**Extraction Well Composites (EW-1 through EW-7)**  
**EPA Method 8151**  
**(2008 - 2009)**



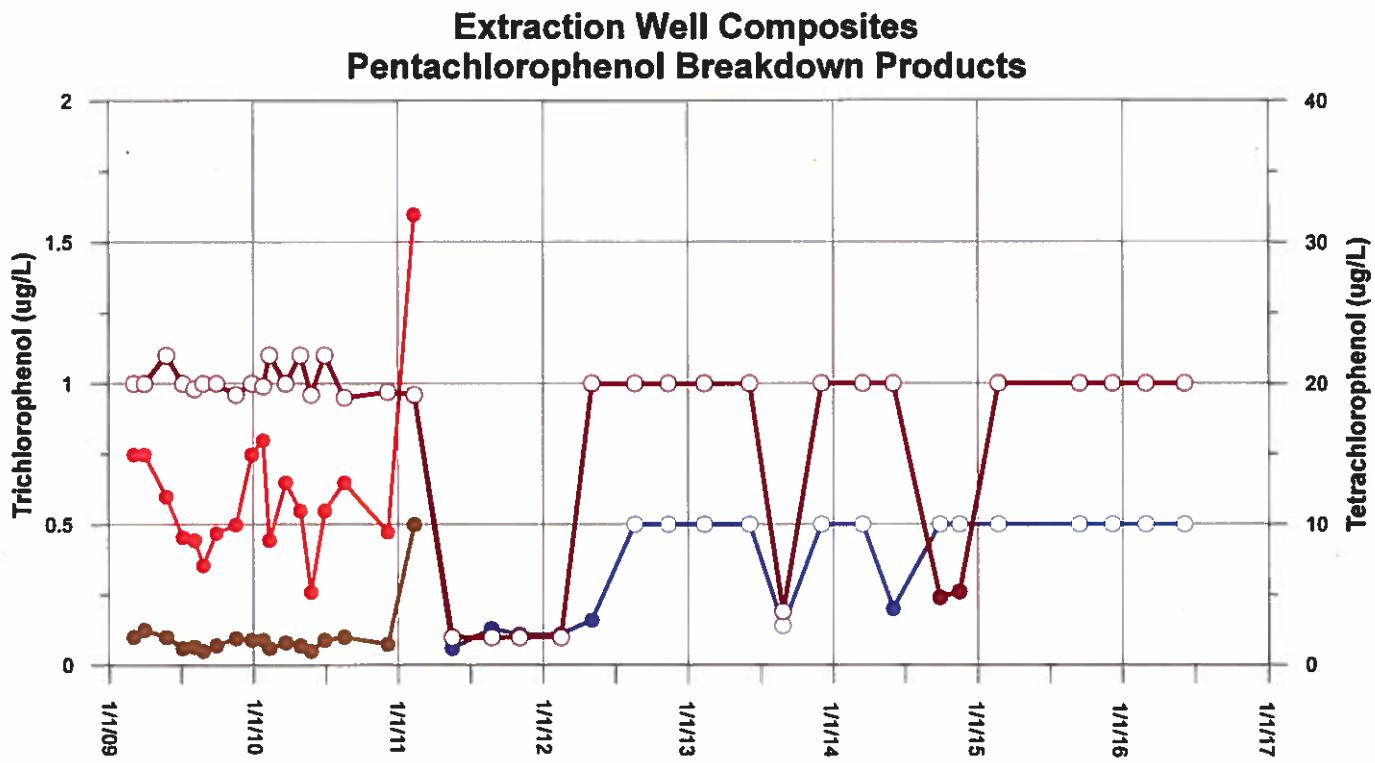
**Legend:**

- Pentachlorophenol Detected Values
- Pentachlorophenol Non-Detected Values

**FIGURE C-17**  
**Pentachlorophenol Groundwater Concentrations in Extraction Well Composite Samples by EPA Method 8270D and 8151**  
 Former J.H. Baxter Wood Treating Facility  
 Arlington, Washington

**Notes:**

ug/L = microgram per liter


**Legend:**

- 2,4,5-Trichlorophenol Detected Values
- 2,4,5-Trichlorophenol Non-Detected Values
- 2,4,6-Trichlorophenol Detected Values
- 2,4,6-Trichlorophenol Non-Detected Values
- 2,3,4,6-Tetrachlorophenol Detected Values
- 2,3,5,6-Tetrachlorophenol Detected Values

**FIGURE C-18**  
**Pentachlorophenol Breakdown Products Groundwater Concentrations in Extraction Well Composite Samples**

Former J.H. Baxter Wood Treating Facility  
Arlington, Washington

**Notes:**

ug/L = microgram per liter  
Analyzed by EPA Method 8270D and 8151M  
See Table 4C for extraction wells combined  
in each composite sample



## **Appendix D**

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55 SW Yamhill Street, Suite 300   Portland, OR 97204  
P: 503.239.8799   F: 503.239.8940  
[info@gsiws.com](mailto:info@gsiws.com)   [www.gsiws.com](http://www.gsiws.com)

## Laboratory Data Validation Memorandum

Site Investigation - Supplemental Groundwater Sampling and Remedial Action

First Quarter 2016 - Pilot Study Performance Monitoring

Former J.H. Baxter & Co. Wood Treating Facility

Arlington, Washington

**Prepared for:**

**J.H. Baxter & Co.**  
85 N. Baxter Road  
P.O. Box 10797  
Eugene, OR 97440

**Prepared by:**

**GSI Water Solutions, Inc.**  
55 SW Yamhill Street, Suite 300  
Portland, OR 97204

**March 2016**

## Acronyms

%D	percent difference
%drift	percent drift
µg/L	microgram per liter
ALS	ALS Environmental
CCV	continuing calibration verification
CLP	Contract Laboratory Program
COC	chain of custody
EPA	U.S. Environmental Protection Agency
GC/MS	gas chromatography/mass spectrometry - gas chromatographer/mass spectrometer
GSI	GSI Water Solutions, Inc.
ICAL	initial calibration
ICV	initial calibration verification
IS	internal standards
ID	identification
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
PAH	polycyclic aromatic hydrocarbon
PCP	pentachlorophenol
QC	quality control
RL	reporting limit
RPD	relative percent difference
RRF	relative response factor
RSD	relative standard deviation
SADMP	Sampling and Analysis and Data Management Plan
SIM	selective ion monitoring

## 1 Introduction

GSI Water Solutions Inc. (GSI), performed a data validation of the analytical laboratory activities conducted for groundwater samples collected at the former J.H. Baxter & Co. Arlington, Washington, wood-treating facility (the facility) in the first quarter 2016. Thirty-three groundwater samples (including two duplicates), a composite extraction well sample, and one field blank rinsate sample were collected on February 28<sup>th</sup> and 29<sup>th</sup>, as part of the facility's *Remedial Action Pilot Study Performance Monitoring Plan* (Baxter, 2007). The samples were submitted to ALS Environmental (ALS) located in Kelso, Washington, where they were analyzed for pentachlorophenol (PCP) and/or breakdown products by Modified U.S. Environmental Protection Agency (EPA) Method 8151A and, in select samples, for polycyclic aromatic hydrocarbons (PAH) by EPA Method 8270-selective ion monitoring (SIM). Table D-1 provides a list of the field and laboratory sample identifications (ID), sample collection dates, and individual sample analyses conducted for the samples reviewed in this memorandum.

## 2 Data Validation Methodology

In agreement with Appendix B (Sampling and Analysis Data Management Plan [SADMP], Revision 2) of the Site Investigation Work Plan, this data validation memorandum was prepared in general accordance with the following documents:

- Baxter. 2002. Sampling and Analysis and Data Management Plan for the Site Investigation Work Plan J.H. Baxter Arlington Facility (SADMP).
- EPA. 1999. USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, EPA-540-R-99-008. October 1999.
- EPA. 2002. Guidance on Environmental Data Verification and Data Validation. US EPA QA/G-8. November 2002.
- EPA. 2014. EPA CLP National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-014-002. August 2014.

The EPA CLP guidelines have been modified for this data review where they differ from method-specific quality control (QC) requirements. In general, the data validation review outline provided in Section D2 of the SADMP was followed, and laboratory analytical reports and supporting documentation were reviewed to assess the following elements:

- Data package and electronic data deliverable completeness
- Chain-of-custody (COC) – completeness and continuous custody
- Proper sample preservation and holding times achieved
- Instrument tuning, calibration, and performance criteria achieved
- Field and laboratory blanks conducted at proper frequency and free of contamination
- Field and laboratory duplicates, matrix spikes (MS)/matrix spike duplicates (MSD), and laboratory control samples (LCS)/laboratory control sample duplicates (LCSD) analyzed at proper frequency and control limits achieved

## 1 Introduction

GSI Water Solutions Inc. (GSI), performed a data validation of the analytical laboratory activities conducted for groundwater samples collected at the former J.H. Baxter & Co. Arlington, Washington, wood-treating facility (the facility) in the first quarter 2016. Thirty-three groundwater samples (including two duplicates), a composite extraction well sample, and one field blank rinsate sample were collected on February 28<sup>th</sup> and 29<sup>th</sup>, as part of the facility's *Remedial Action Pilot Study Performance Monitoring Plan* (Baxter, 2007). The samples were submitted to ALS Environmental (ALS) located in Kelso, Washington, where they were analyzed for pentachlorophenol (PCP) and/or breakdown products by Modified U.S. Environmental Protection Agency (EPA) Method 8151A and, in select samples, for polycyclic aromatic hydrocarbons (PAH) by EPA Method 8270-selective ion monitoring (SIM). Table D-1 provides a list of the field and laboratory sample identifications (ID), sample collection dates, and individual sample analyses conducted for the samples reviewed in this memorandum.

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- EPA. 1999. USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, EPA-540-R-99-008. October 1999.
- EPA. 2002. Guidance on Environmental Data Verification and Data Validation. US EPA QA/G-8. November 2002.
- EPA. 2014. EPA CLP National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-014-002. August 2014.

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- Data package and electronic data deliverable completeness
- Chain-of-custody (COC) – completeness and continuous custody
- Proper sample preservation and holding times achieved
- Instrument tuning, calibration, and performance criteria achieved
- Field and laboratory blanks conducted at proper frequency and free of contamination
- Field and laboratory duplicates, matrix spikes (MS)/matrix spike duplicates (MSD), and laboratory control samples (LCS)/laboratory control sample duplicates (LCSD) analyzed at proper frequency and control limits achieved

- Surrogate compound and internal standard analyses performed and recoveries within accuracy control limits
- Required detection limits achieved

Although this data validation memorandum includes a review of the QC results provided in laboratory analytical reports and reported on QC summary forms, it does not include a review of the raw analytical data to confirm reported concentrations and analyte identification.

### 3 Qualifiers and Reason Codes Applied During Validation

Qualifier flags may be applied to data during the validation process if it is determined that certain QC elements have not been achieved.

#### 3.1 Qualifiers

Data qualifiers and definitions are consistent with the EPA CLP *National Functional Guidelines for Superfund Organic Methods Data Review* and previous data validation memoranda. Specifically, the qualifiers that may be applied during this validation process are as follows:

- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
- NJ The analysis indicates the presence of an analyte that has been “tentatively identified” or “presumptively” as present, and the associated numerical value is the estimated concentration in the sample.
- R The sample result is rejected because of serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may be inaccurate or imprecise.

### **3.2 Reason Codes**

Reason codes are applied with qualifiers to identify the data validator's justification for assigning a particular qualifier flag. The following reason codes are consistent with laboratory data qualifiers and previous data validation review memoranda.

- DL The analyte was detected at a concentration greater than the method detection limit (MDL), but lower than the reporting limit (RL).
- LC Low continuing calibration verification (CCV) recovery. Analytical result may be biased low.
- HC High CCV recovery. Analytical result may be biased high.
- HT The sample holding time (extraction or analysis) was exceeded.
- MB The analyte was detected in the sample and the associated laboratory/method blank. The concentration detected in the sample was less than 5 times the concentration detected in the blank.
- MI Matrix interference prevented adequate resolution of the target compound at the normal limit.
- RB The analyte was detected in the sample and the associated rinsate blank. The concentration detected in the sample was less than 5 times the concentration detected in the blank.
- SC The relative percent difference (RPD) between results from the primary and confirmation columns is greater than 40 percent.
- SR The surrogate recovery was outside of control criteria.

## **4 Validation of Custody, Preservation, and Completeness**

Sample custody was maintained as required from sample collection to receipt at ALS. Sample custody seals were on all sample coolers and were intact at the time of receipt to the laboratory. The samples were received intact and properly preserved according to the requirements of the SADMP. Sample coolers arrived at temperatures below the EPA-recommended maximum of 6°Celcius (C), and all samples were immediately stored in a 4°C refrigerator upon receipt. The laboratory reports are complete and contain results for the samples and tests requested on the COCs.

## **5 Validation of Laboratory Analytical Data**

All 35 samples were analyzed for PCP and/or breakdown products via EPA Method 8151A Modified, and 14 of the 35 samples were analyzed for PAHs via EPA Method 8270D-SIM.

Findings from the review of laboratory data generated during the two analytical method analyses are presented below.

## **5.1 Pentachlorophenol and Breakdown Products by EPA Method 8151A Modified**

### **5.1.1 Holding Times**

In accordance with the SADMP-specified holding times, samples analyzed for PCP and/or breakdown products were extracted within 7 days from the time of collection, and sample extracts were analyzed within 40 days from the time of extraction.

### **5.1.2 Instrument Calibration**

#### **5.1.2.1 Initial Calibration**

Initial calibration (ICAL) criteria were achieved. Coefficients of determination were greater than the control criteria of 0.99, and relative standard deviations (RSD) were less than the SADMP-specified maximum of 25 percent.

#### **5.1.2.2 Initial Calibration Verification**

Initial calibration verifications (ICV) or second source calibration verification analyte recoveries associated with the PCP analysis were within the SADMP-specified limit of  $\pm 20$  percent difference (%D) or percent drift (%drift) of the ICAL. The %D is used when performing average response factor model calibration and the %drift is used when calibrating using a regression fit model.

#### **5.1.2.3 Continuing Calibration Verification**

All continuing calibration verification (CCV) recoveries associated with the PCP analysis were within the control criteria limit of  $\pm 20$  %D or %drift of the initial calibration.

### **5.1.3 Blank Analyses**

#### **5.1.3.1 Laboratory/Method Blanks**

Laboratory or method blanks were analyzed at the required frequency of one per extraction batch of 20 or fewer samples. Target analytes were not detected in the method blanks. However, the MDL was elevated for pentachlorophenol in sample method blanks KWG1601732-4 and KWG1601733-4 due to the presence of non-target background components. ALS reports that the level of background components was relatively low compared to the MDL, so the effect on the results was minimal. However, the results are flagged in the laboratory report to indicate the problem. Although the MDL quantitation goal of 0.06  $\mu\text{g/L}$  was not met in several samples due to the presence of non-target background analytes, MRL goals of 0.5  $\mu\text{g/L}$  were met for all samples where pentachlorophenol was not detected. The sample data are not qualified further.

#### **5.1.3.2 Field Rinsate Blanks**

Pentachlorophenol was detected in the field rinsate blank. However, the MDL is slightly elevated due to the presence of non-target background components. The SADMP-specified reporting limit goal of 0.5  $\mu\text{g/L}$  was met and the sample data are not qualified further.

#### **5.1.4 Surrogate Analysis**

The surrogate compound, 4-bromo-2,6-dichlorophenol, was added to all field samples, blanks, and QC samples during the analysis of PCP. Recoveries of the surrogate compound were within the SADMP-specified and laboratory-specified control limits.

#### **5.1.5 Laboratory Control Sample Analyses**

ALS reported LC samples at the required frequency of one per extraction batch of 20 or fewer samples. Recovery percentages were within control limits.

#### **5.1.6 Matrix Spike/Matrix Spike Duplicate Analyses**

MS and MSD samples were processed from samples EW 1,2,4 Composite, MW-36, and BXS-5. Recovery percentages and RPD values for 2,4,6-Trichlorophenol, 2,4,5-Trichlorophenol, and Total Tetrachlorophenols in MS/MSD samples from EW 1,2,4 Composite were within SADMP-specified and laboratory-specified control limits. Recovery percentages and RPD values outside of acceptance criteria were as follows:

- In all three MS/MSD sample pairs, recoveries for PCP were outside of laboratory-specified and/or SADMP-specified criteria. ALS reports that the recoveries for PCP in all three samples were not applicable because the analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery. No further corrective actions were taken to qualify the data.

#### **5.1.7 Field Duplicate Sample Analyses**

Field duplicate pairs, MW-24/MW-44 and BXS-1/BXS-5, were processed during the analysis for PCP. Concentrations of PCP detected in the field duplicate pairs are summarized in Table D-2. The RPD between the primary and duplicate sample were within the SADMP-specified control limit of 35 percent or less for both duplicate pairs.

#### **5.1.8 Laboratory Reporting Limits**

Reporting limit requirements were met for undiluted samples. ALS reports that several samples required dilution due to the presence of elevated levels of target analyte. The reporting limits were adjusted to reflect the dilution in the following samples:

- The RLs were adjusted in samples MW-22, MW-23, MW-24, MW-25, MW-32, MW-36 MW-39, MW-40, MW-41, MW-44, EW 1,2,4 Composite, BXS-1, and BXS-5 due to elevated levels of target analyte. PCP was detected in all of these samples well above the reporting limit and the data are not further qualified.

#### **5.1.9 Confirmation Results**

Analytical results were collected from a primary and confirmation column during the analysis of PCP and associated breakdown products by EPA Method 8151A Modified. The RPDs between analytical results from the primary and confirmation columns were less than the laboratory-specified 40 percent limit, for all target analytes.

### **5.1.10 Data Reporting and Additional Analytical Method Qualifications**

ALS assigned "J" qualifier flags to detected results falling between the MDL and RL. GSI agrees that these results should be qualified as estimated values given their detection below RLs.

ALS reports that the detection limit was elevated for PCP in a few field samples due to the presence of non-target background components. The matrix interference prevented adequate resolution of PCP at the normal limit. Although the MDL goal of 0.06 µg/L for PCP was not met in several samples, MRL goals of 0.5 µg/L were met for all samples where PCP was not detected. The sample data are not qualified further.

## **5.2 Polycyclic Aromatic Hydrocarbons by EPA Method 8270D-SIM**

### **5.2.1 Holding Times**

In accordance with the SADMP-specified holding times, samples analyzed for PAHs were extracted within 7 days from the time of collection, and sample extracts were analyzed within 40 days from the time of extraction.

### **5.2.2 Instrument Tuning and Mass Calibration**

The compound decafluorotriphenylphosphine was used to tune the GC/MS before the ICAL and for each 12-hour analytical shift. ALS reports that all relative abundance criteria passed method-specified limits.

### **5.2.3 Initial Calibration**

The average relative response factors (RRF) were greater than the SADMP-specified minimum of 0.1, and RSDs were less than the SADMP-specified (< 25 percent) or laboratory-specified (< 20 percent) control limits.

### **5.2.4 Initial Calibration Verification**

The ICV analyte recoveries associated with the analysis of PAHs were within the SADMP-specified limits of  $\pm 20\text{ \%D}$  of the ICAL.

### **5.2.5 Continuing Calibration Verification**

The CCV recoveries associated with the analysis of PAHs were within control criteria limits of  $\pm 20\text{ \%D}$  of the ICAL.

### **5.2.6 Blank Analyses**

#### **5.2.6.1 Laboratory/Method Blanks**

A method blank was analyzed at the required frequency of 1 per extraction batch of 20 or fewer samples. The method blank was free of target analytes.

#### **5.2.6.2 Field Rinsate Blanks**

The following PAH analytes were detected within the field rinsate blank:

- Naphthalene was detected at a concentration of 0.014 µg/L in the field rinsate blank between the MDL and RL. For associated field samples with detections of naphthalene less than 5 times the field rinsate blank concentration, sample detections were flagged (U-RB) to indicate that the concentration could not be distinguished from potential contamination associated with the sample collection process. This qualifier was applied to samples MW-3, MW-18, MW-30, MW-36, BXS-1, and BXS-5. In accordance with EPA CLP *National Functional Guidelines for Superfund Organic Methods Data Review*, for any analytes detected in method blanks below RLs, associated sample results that are below RLs should be reported at the RL. Any associated sample result above the RL, but less than 5 times the field blank concentration, is reported as is, but qualified as a non-detect value.
- 2-Methylnaphthalene was detected at a concentration of 0.0041 µg/L in the field rinsate blank between the MDL and RL. For associated field samples with detections of 2-methylnaphthalene less than 5 times the field rinsate blank concentration, sample detections were qualified as non-detects (U-RB) following the procedure described above. This qualifier was applied to 2-methylnaphthalene detections in samples BXS-1 and BXS-5.

### **5.2.7 Surrogate Analysis**

Surrogate compounds flourene-d<sub>10</sub>, fluoranthene-d<sub>10</sub>, and terphenyl-d<sub>14</sub> were added to all field samples, blanks, and QC samples during the analysis of PAHs. Surrogate recoveries were within the SADMP-specified and laboratory-specified control limits.

### **5.2.8 Internal Standard Evaluation**

Internal standards (IS) were added to all samples, blanks, and QC samples as required. All IS recoveries were within the SADMP-specified 50 to 100 percent limits.

### **5.2.9 Laboratory Control Sample Analyses**

ALS processed and analyzed LCS/LCSDs at the required frequency of 1 per extraction batch of 20 or fewer samples. LCS/LCSD recoveries and RPD values were within SADMP-specified criteria and/or laboratory control limits for analytes not listed in the SADMP.

### **5.2.10 Matrix Spike/Matrix Spike Duplicate Analyses**

MS/MSDs were not processed during the analysis of PAH samples from this project. The laboratory provided LCS and LCSD data to demonstrate acceptable analytical precision and accuracy.

### **5.2.11 Field Duplicate Sample Analyses**

Field duplicate pairs, BXS-1/BXS-5, were processed during the analysis of PAHs. Although some analytes were detected between the MDL and RL, all detections were either less than 5 times the concentration detected in the field rinsate blank or the difference between the sample results for specific analytes was less than the associated reporting limit. These results are noted in footnote 1 of Table D-2.

### 5.2.12 Laboratory Reporting Limits

All reporting limit goals were met during the analysis of PAHs.

### 5.2.13 Data Reporting and Additional Analytical Method Qualifications

ALS assigned "J" qualifier flags to detected results falling between the MDL and RL. GSI agrees that these results should be qualified as estimated values because of their detection below RLs. However, in instances where these detections were less than five times that of a detection within the associated field blank, GSI changed the qualifier to a "U" flag as noted in Section 5.2.6.

## 6 Overall Assessment of Data Usability

The data are fully usable with the addition of the qualifiers specified in Sections 5.1 and 5.2. Qualifiers added or modified during data validation are summarized in Table D-3.

No data were rejected during the validation of analytical data. This achieves the SADMP-specified completeness goal of 95 percent usable data.

## 7 References

Baxter. 2002. Sampling and Analysis and Data Management Plan for the Site Investigation Work Plan J.H. Baxter Arlington Facility, Revision 2. Prepared by the J.H. Baxter Project Team for EPA Region 10. May 15, 2002.

Baxter. 2007. Remedial Action Pilot Study Performance Monitoring Plan. Prepared by the J.H. Baxter Project Team for EPA Region 10. September 2007.

EPA. 1996. Method 8151A, Chlorinated Herbicides by GC Using Methylation or Pentafluorobenzylation Derivitization, Revision 1. December 1996.

EPA. 1999. USEPA CLP National Functional Guidelines for Organic Data Review, EPA-540-R-99-008. October 1999.

EPA. 2001. Region 9 Superfund Data Evaluation/Validation Guidance, Version 1, R9QA/006.1, December 2001.

EPA. 2002. Guidance on Environmental Data Verification and Data Validation. US EPA QA/G-8. November 2002.

EPA. 2007. Method 8270D, Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4. February 2007.

EPA. 2014. EPA CLP National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-014-002. August 2014.

**Table D-1. Field Samples Submitted with Corresponding Laboratory Identifications**

J.H. Baxter & Co.  
Arlington, Washington

Field Sample ID	Sample Date	ALS Sample ID	Notes
BXS-1	2/29/2016	K1602117-001	
BXS-2	2/29/2016	K1602117-002	
BXS-5	2/29/2016	K1602117-003	Field duplicate for BXS-1, MS/MSD
HCMW-7	2/29/2016	K1602113-001	PCP only
MW-2	2/28/2016	K1602113-006	
MW-3	2/28/2016	K1602116-009	
MW-15	2/29/2016	K1602113-002	
MW-16	2/29/2016	K1602113-003	
MW-17	2/29/2016	K1602113-004	
MW-18	2/29/2016	K1602113-005	
MW-22	2/28/2016	K1602113-007	PCP only
MW-23	2/28/2016	K1602113-008	PCP only
MW-24	2/28/2016	K1602113-009	PCP only
MW-25	2/28/2016	K1602113-010	PCP only
MW-26	2/28/2016	K1602113-011	PCP only
MW-27	2/28/2016	K1602114-001	PCP only
MW-28	2/29/2016	K1602114-002	PCP only
MW-29	2/28/2016	K1602114-003	PCP only
MW-30	2/28/2016	K1602114-004	
MW-31	2/29/2016	K1602114-005	PCP only
MW-32	2/28/2016	K1602114-006	PCP only
MW-33	2/28/2016	K1602114-007	PCP only
MW-34	2/28/2016	K1602114-008	PCP only
MW-35	2/28/2016	K1602114-009	
MW-36	2/28/2016	K1602114-010	MS/MSD
MW-37	2/28/2016	K1602114-011	
MW-38	2/28/2016	K1602116-001	PCP only
MW-39	2/29/2016	K1602116-002	PCP only
MW-40	2/29/2016	K1602116-003	PCP only
MW-41	2/29/2016	K1602116-004	PCP only
MW-42	2/29/2016	K1602116-005	PCP only
MW-43	2/29/2016	K1602116-006	PCP only
MW-44	2/28/2016	K1602116-007	PCP only, field duplicate for MW-24
EW 1,2,4 Composite	2/29/2016	K1602115-004	Lab composite, MS/MSD
Field Blank Rinsate	2/29/2016	K1602116-008	

**Notes**

ALS = ALS Environmental

MS/MSD = matrix spike/matrix spike duplicate

PCP = pentachlorophenol

**Table D-2. Field Duplicate Detections**

J.H. Baxter & Co.  
Arlington, Washington

Sample IDs	Analyte	Unit	Reporting Limit	Primary Sample	Field Duplicate	Relative Percent Difference	Notes
BXS-1 & BXS-5	Phenanthrene	µg/L	0.019	0.0095 J	0.019 U	67	1,2
BXS-1 & BXS-5	Anthracene	µg/L	0.019	0.0079 J	0.019 U	83	1,2
BXS-1 & BXS-5	Pentachlorophenol	µg/L	2.5	64	64	0	3
MW-24 & MW-44	Pentachlorophenol	µg/L	5.0	210	200	5	3

**Notes**

ug/L = micrograms per liter

J = Result is an estimated concentration that is less than the method reporting limit, but greater than or equal to the method detection limit

U = Analyte was not detected above the reported sample quantification limit.

1 The difference between the detected results is less than the associated reporting limit

2 No PAH analytes besides phenanthrene and anthracene were detected above the reported sample quantification limits in samples BXS-1 &amp; BXS-5

3 Samples required a dilution due to elevated levels of target compound

**Table D-3. Qualifiers Added or Modified During Validation**

J.H. Baxter & Co.

Arlington, Washington

Sample ID	Analyte	Unit	Result	Qualifier	Reason Codes
MW-3	Naphthalene	ug/L	0.019	U	RB
MW-18	Naphthalene	ug/L	0.019	U	RB
MW-30	Naphthalene	ug/L	0.020	U	RB
MW-36	Naphthalene	ug/L	0.019	U	RB
BXS-1	Naphthalene	ug/L	0.019	U	RB
BXS-1	2-Methylnaphthalene	ug/L	0.019	U	RB
BXS-5	Naphthalene	ug/L	0.019	U	RB
BXS-5	2-Methylnaphthalene	ug/L	0.019	U	RB

**Notes**

μg/L = micrograms per liter

**Qualifier Definitions**

U = Analyte was not detected above the reported sample quantification limit.

**Reason Code Definitions**

RB = The analyte was detected in the sample and the associated rinsate blank. The sample concentration is less than five times the concentration detected in the rinsate blank. Or the RL was elevated to the value detected in the field/method blank.



55 SW Yamhill Street, Suite 300   Portland, OR 97204  
P: 503.239.8799   F: 503.239.8940  
[info@gsiws.com](mailto:info@gsiws.com)   [www.gsiws.com](http://www.gsiws.com)

## Laboratory Data Validation Memorandum

Site Investigation - Supplemental Groundwater Sampling and Remedial Action  
Second Quarter 2016 - Pilot Study Performance Monitoring  
Former J.H. Baxter & Co. Wood Treating Facility  
Arlington, Washington

**Prepared for:**

**J.H. Baxter & Co.**  
85 N. Baxter Road  
P.O. Box 10797  
Eugene, OR 97440

**Prepared by:**

**GSI Water Solutions, Inc.**  
55 SW Yamhill Street, Suite 300  
Portland, OR 97204

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SECOND QUARTER 2016 LABORATORY DATA VALIDATION MEMORANDUM  
PILOT STUDY PERFORMANCE MONITORING, FORMER J.H. BAXTER & CO. WOOD TREATING FACILITY ARLINGTON, WASHINGTON

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## Acronyms

%D	percent difference
%drift	percent drift
µg/L	microgram per liter
ALS	ALS Environmental
CCV	continuing calibration verification
CLP	Contract Laboratory Program
COC	chain of custody
EPA	U.S. Environmental Protection Agency
GC/MS	gas chromatography/mass spectrometry - gas chromatograph/mass spectrometer
GSI	GSI Water Solutions, Inc.
ICAL	initial calibration
ICV	initial calibration verification
IS	internal standards
ID	identification
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
PAH	polycyclic aromatic hydrocarbon
PCP	pentachlorophenol
QC	quality control
RL	reporting limit
RPD	relative percent difference
RRF	relative response factor
RSD	relative standard deviation
SADMP	Sampling and Analysis and Data Management Plan
SIM	selective ion monitoring

## 1 Introduction

GSI Water Solutions Inc. (GSI), performed a data validation of the analytical laboratory activities conducted for groundwater samples collected at the former J.H. Baxter & Co. Arlington, Washington, wood-treating facility (the facility) in the second quarter 2016. Thirty-three groundwater samples (including two duplicates), a composite extraction well sample, and one field blank rinsate sample were collected on June 5<sup>th</sup> and 6<sup>th</sup>, as part of the facility's *Remedial Action Pilot Study Performance Monitoring Plan* (Baxter, 2007). The samples were submitted to ALS Environmental (ALS) located in Kelso, Washington, where they were analyzed for pentachlorophenol (PCP) and/or breakdown products by Modified U.S. Environmental Protection Agency (EPA) Method 8151A and, in select samples, for polycyclic aromatic hydrocarbons (PAH) by EPA Method 8270D-selective ion monitoring (SIM). Table D-1 provides a list of the field and laboratory sample identifications (ID), sample collection dates, and individual sample analyses conducted for the samples reviewed in this memorandum.

## 2 Data Validation Methodology

In agreement with Appendix B (Sampling and Analysis Data Management Plan [SADMP], Revision 2) of the Site Investigation Work Plan, this data validation memorandum was prepared in general accordance with the following documents:

- Baxter. 2002. Sampling and Analysis and Data Management Plan for the Site Investigation Work Plan J.H. Baxter Arlington Facility (SADMP).
- EPA. 1999. USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, EPA-540-R-99-008. October 1999.
- EPA. 2002. Guidance on Environmental Data Verification and Data Validation. US EPA QA/G-8. November 2002.
- EPA. 2014. EPA CLP National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-014-002. August 2014.

The EPA CLP guidelines have been modified for this data review where they differ from method-specific quality control (QC) requirements. In general, the data validation review outline provided in Section D2 of the SADMP was followed, and laboratory analytical reports and supporting documentation were reviewed to assess the following elements:

- Data package and electronic data deliverable completeness
- Chain-of-custody (COC) – completeness and continuous custody
- Proper sample preservation and holding times achieved
- Instrument tuning, calibration, and performance criteria achieved
- Field and laboratory blanks conducted at proper frequency and free of contamination
- Field and laboratory duplicates, matrix spikes (MS)/matrix spike duplicates (MSD), and laboratory control samples (LCS)/laboratory control sample duplicates (LCSD) analyzed at proper frequency and control limits achieved

- Surrogate compound and internal standard analyses performed and recoveries within accuracy control limits
- Required detection limits achieved

Although this data validation memorandum includes a review of the QC results provided in laboratory analytical reports and reported on QC summary forms, it does not include a review of the raw analytical data to confirm reported concentrations and analyte identification.

### 3 Qualifiers and Reason Codes Applied During Validation

Qualifier flags may be applied to data during the validation process if it is determined that certain QC elements have not been achieved.

#### 3.1 Qualifiers

Data qualifiers and definitions are consistent with the EPA CLP *National Functional Guidelines for Superfund Organic Methods Data Review* and previous data validation memoranda.

Specifically, the qualifiers that may be applied during this validation process are as follows:

- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" or "presumptively" as present, and the associated numerical value is the estimated concentration in the sample.
- R The sample result is rejected because of serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may be inaccurate or imprecise.

#### 3.2 Reason Codes

Reason codes are applied with qualifiers to identify the data validator's justification for assigning a particular qualifier flag. The following reason codes are consistent with laboratory data qualifiers and previous data validation review memoranda.

- DL The analyte was detected at a concentration greater than the method detection limit (MDL), but lower than the reporting limit (RL).
- LC Low continuing calibration verification (CCV) recovery. Analytical result may be biased low.
- HC High CCV recovery. Analytical result may be biased high.
- HT The sample holding time (extraction or analysis) was exceeded.
- MB The analyte was detected in the sample and the associated laboratory/method blank. The concentration detected in the sample was less than 5 times the concentration detected in the blank.
- MI Matrix interference prevented adequate resolution of the target compound at the normal limit.
- RB The analyte was detected in the sample and the associated rinsate blank. The concentration detected in the sample was less than 5 times the concentration detected in the blank.
- SC The relative percent difference (RPD) between results from the primary and confirmation columns is greater than 40 percent.
- SR The surrogate recovery was outside of control criteria.

## 4 Validation of Custody, Preservation, and Completeness

Sample custody was maintained as required from sample collection to receipt at ALS. Sample custody seals were on all sample coolers and were intact at the time of receipt to the laboratory. The samples were received intact and properly preserved according to the requirements of the SADMP. Sample coolers arrived at temperatures below the EPA-recommended maximum of 6°Celcius (C), and all samples were immediately stored in a 4°C refrigerator upon receipt. However, the laboratory notes that, "More ice is required during warm times of the year. Bottles measured between 6.4°C and 8.7°C (1 L Amber glass bottles) from coolers 2 and 3." The laboratory reports are complete and contain results for the samples and tests requested on the COCs.

## 5 Validation of Laboratory Analytical Data

All 35 samples were analyzed for PCP and/or breakdown products via EPA Method 8151A Modified, and 14 of the 35 samples were analyzed for PAHs via EPA Method 8270D-SIM. Findings from the review of laboratory data generated during the two analytical method analyses are presented below.

## **5.1 Pentachlorophenol and Breakdown Products by EPA Method 8151A Modified**

### **5.1.1 Holding Times**

In accordance with the SADMP-specified holding times, samples analyzed for PCP and/or breakdown products were extracted within 7 days from the time of collection, and sample extracts were analyzed within 40 days from the time of extraction.

### **5.1.2 Instrument Calibration**

#### **5.1.2.1 Initial Calibration**

Initial calibration (ICAL) criteria were achieved. Coefficients of determination were greater than the control criteria of 0.99, and relative standard deviations (RSD) were less than the SADMP-specified maximum of 25 percent.

#### **5.1.2.2 Initial Calibration Verification**

Initial calibration verifications (ICV) or second source calibration verification analyte recoveries associated with the PCP analysis were within the SADMP-specified limit of  $\pm 20$  percent difference (%D) or percent drift (%drift) of the ICAL. The %D is used when performing average response factor model calibration and the %drift is used when calibrating using a regression fit model.

#### **5.1.2.3 Continuing Calibration Verification**

Continuing calibration verification (CCV) recoveries associated with the PCP analysis were within the control criteria limit of  $\pm 20$  %D or %drift of the initial calibration with four exceptions as follows:

- ALS reports that the upper criterion was exceeded for PCP on the confirmation column in CCVs 0628F018, 0629F027, and 0629F032. The results were reported from the column with an acceptable CCV within control limits. No further corrective action was required.

### **5.1.3 Blank Analyses**

#### **5.1.3.1 Laboratory/Method Blanks**

Laboratory or method blanks were analyzed at the required frequency of one per extraction batch of 20 or fewer samples. Target analytes were not detected in the method blanks.

#### **5.1.3.2 Field Rinsate Blanks**

Pentachlorophenol was detected in the field rinsate blank at a concentration of 1.3 micrograms per liter ( $\mu\text{g/L}$ ) above the RL. In accordance with EPA CLP *National Functional Guidelines for Superfund Organic Methods Data Review*, field samples with detections of pentachlorophenol less than 5 times the field rinsate blank concentration were flagged (U-RB) to indicate that the concentration could not be distinguished from potential contamination associated with the sample collection process. Additionally, for samples where PCP was not detected but the reporting limit was less than the concentration of PCP detected in the field rinsate blank, the reporting limit was changed to the detected value of 1.3  $\mu\text{g/L}$ . This qualifier was applied to

samples BXS-2, HCMW-7, MW-2, MW-15, MW-16, MW-17, MW-18, MW-26, MW-27, MW-28, MW-29, MW-30, MW-31, MW-34, MW-35, MW-37, MW-38, and MW-43.

#### **5.1.4 Surrogate Analysis**

The surrogate compound, 4-bromo-2,6-dichlorophenol, was added to all field samples, blanks, and QC samples during the analysis of PCP. Recoveries of the surrogate compound were within the SADMP-specified and laboratory-specified control limits with a few exceptions:

- ALS reports that control criteria were not applicable for 4-bromo-2,6-dichlorophenol in several MS/DMS samples due to a required dilution which resulted in a surrogate concentration below the reporting limit. ALS reports that no further corrective action was appropriate.

#### **5.1.5 Laboratory Control Sample Analyses**

ALS reported LC samples at the required frequency of one per extraction batch of 20 or fewer samples. Recovery percentages were within control limits.

#### **5.1.6 Matrix Spike/Matrix Spike Duplicate Analyses**

MS and MSD samples were processed from samples EW 1,2,4 Composite and MW-26. Recovery percentages and RPD values for 2,4,6-Trichlorophenol and 2,4,5-Trichlorophenol in MS/MSD samples from EW 1,2,4 Composite were within SADMP-specified and laboratory-specified control limits. Similarly, recovery percentages and RPD values for PCP in MS/MSD samples from MW-26 were within laboratory control limits. Recovery percentages and RPD values outside of acceptance criteria were as follows:

- The recoveries of PCP in MS/MSD samples prepared from EW 1,2,4 were below laboratory control criteria. ALS reports that these recoveries are not applicable because the sample required a dilution such that the added spike concentration was diluted below the reporting limit. No further corrective action was required.
- The recovery of Total Tetrachlorophenols was below laboratory criteria. However the recovery was acceptable within the LC samples, and no further corrective action was taken.

#### **5.1.7 Field Duplicate Sample Analyses**

Field duplicate pairs, MW-33/MW-44 and BXS-1/BXS-5, were processed during the analysis for PCP. Concentrations of PCP detected in the field duplicate pairs are summarized in Table D-2. The RPD between the primary and duplicate sample were within the SADMP-specified control limit of 35 percent or less for both duplicate pairs.

#### **5.1.8 Laboratory Reporting Limits**

Due to contamination detected in the field rinsate blank, reporting limits were raised to the detected concentration of PCP in the rinsate blank (1.3 ug/L). Additionally, ALS reports that several samples required dilution due to the presence of elevated levels of target analyte. The reporting limits were adjusted to reflect the dilution in the following samples:

- The RLs were adjusted in samples MW-22, MW-23, MW-24, MW-25, MW-32, MW-40, MW-41, EW 1,2,4 Composite, BXS-1, and BXS-5 due to elevated levels of target

analyte. PCP was detected in all of these samples well above the reporting limit and the data are not further qualified.

### **5.1.9 Confirmation Results**

Analytical results were collected from a primary and confirmation column during the analysis of PCP and associated breakdown products by EPA Method 8151A Modified. The RPDs between analytical results from the primary and confirmation columns were less than the laboratory-specified 40 percent limit, for all target analytes.

### **5.1.10 Data Reporting and Additional Analytical Method Qualifications**

ALS assigned "J" qualifier flags to detected results falling between the MDL and RL. These detections were less than 5 times the concentration detected in the field rinsate blank, and subsequently reported as non-detects (U-RB). Associated RLs were raised to the concentration of 1.3 ug/L PCP detected in the field rinsate blank.

## **5.2 Polycyclic Aromatic Hydrocarbons by EPA Method 8270D-SIM**

### **5.2.1 Holding Times**

In accordance with the SADMP-specified holding times, samples analyzed for PAHs were extracted within 7 days from the time of collection, and sample extracts were analyzed within 40 days from the time of extraction.

### **5.2.2 Instrument Tuning and Mass Calibration**

The compound decafluorotriphenylphosphine was used to tune the GC/MS before the ICAL and for each 12-hour analytical shift. ALS reports that all relative abundance criteria passed method-specified limits.

### **5.2.3 Initial Calibration**

The average relative response factors (RRF) were greater than the SADMP-specified minimum of 0.1, and RSDs were less than the SADMP-specified (< 25 percent) or laboratory-specified (< 20 percent) control limits.

### **5.2.4 Initial Calibration Verification**

The ICV analyte recoveries associated with the analysis of PAHs were within the SADMP-specified limits of  $\pm 20\text{ \%D}$  of the ICAL.

### **5.2.5 Continuing Calibration Verification**

The CCV recoveries associated with the analysis of PAHs were within control criteria limits of  $\pm 20\text{ \%D}$  of the ICAL with four exceptions:

- ALS reports that CCV values for Indeno (1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene and Terphenyl-d14 were outside of control criteria. ALS reports that the quality of the sample data was not significantly affected, and no further corrective action was required.

## 5.2.6 Blank Analyses

### 5.2.6.1 Laboratory/Method Blanks

A method blank was analyzed at the required frequency of 1 per extraction batch of 20 or fewer samples. The method blank was free of target analytes with one exception:

- Phenanthrene was detected in the method blank at a concentration of 0.0053 µg/L between the MDL and RL. This compound was also detected in the field rinsate blank at a higher concentration of 0.076 µg/L (described below). For associated field samples with detections of phenanthrene less than 5 times the concentration detected in the blank samples, sample detections were flagged (U-RB) to indicate that the concentration could not be distinguished from potential contamination associated with the sample collection process.

### 5.2.6.2 Field Rinsate Blanks

The following PAH analytes were detected within the field rinsate blank:

- Naphthalene was detected at a concentration of 0.049 µg/L in the field rinsate blank above the RL. In accordance with EPA CLP *National Functional Guidelines for Superfund Organic Methods Data Review*, field samples with detections of naphthalene above the RL but less than 5 times the field rinsate blank concentration were flagged (U-RB) to indicate that the concentration could not be distinguished from potential contamination associated with the sample collection process. Additionally, for samples where naphthalene was detected below the rinsate blank concentration or for samples where naphthalene was not detected but the reporting limit was less than the concentration of naphthalene detected in the field rinsate blank, the reporting limit was changed to the rinsate blank value of 0.049 µg/L and the results were flagged as non-detects (U-RB). This qualifier was applied to all samples analyzed for naphthalene.
- Acenaphthylene was detected at a concentration of 0.0048 µg/L in the field rinsate blank between the MDL and RL. For associated field samples with detections of acenaphthylene less than 5 times the field rinsate blank concentration, sample detections were qualified as non-detects (U-RB) following the procedure described above. For samples where detections of acenaphthylene were between the MDL and RL but less than 5 times the rinsate blank concentration, the RL was reported and the sample result was qualified as a non-detect (U-RB). This qualifier was applied to acenaphthylene detections in samples MW-15 and MW-36.
- Fluorene was detected at a concentration of 0.0075 µg/L in the field rinsate blank between the MDL and RL. For associated field samples with detections of fluorene less than 5 times the field rinsate blank concentration, sample detections were qualified as non-detects (U-RB) following the procedures described above. For samples where detections of fluorene were between the MDL and RL but less than 5 times the rinsate blank concentration, the RL was reported and the sample result was qualified as a non-detect (U-RB). This qualifier was applied to fluorene detections in samples BXS-2, MW-30, MW-36,
- Phenanthrene was detected at a concentration of 0.076 µg/L in the field rinsate blank above the RL. Field samples with detections of phenanthrene above the RL but less than

5 times the field rinsate blank concentration were flagged (U-RB) to indicate that the concentration could not be distinguished from potential contamination associated with the sample collection process. Additionally, for samples where phenanthrene was detected below the rinsate blank concentration or for samples where phenanthrene was not detected but the reporting limit was less than the concentration of phenanthrene detected in the field rinsate blank, the reporting limit was changed to the rinsate blank value of 0.076 µg/L and the results were flagged as non-detects (U-RB). This qualifier was applied to all samples analyzed for phenanthrene.

- Anthracene was detected at a concentration of 0.048 µg/L in the field rinsate blank above the RL. Field samples with detections of anthracene above the RL but less than 5 times the field rinsate blank concentration were flagged (U-RB) to indicate that the concentration could not be distinguished from potential contamination associated with the sample collection process. Additionally, for samples where anthracene was detected below the rinsate blank concentration or for samples where anthracene was not detected but the reporting limit was less than the concentration of anthracene detected in the field rinsate blank, the reporting limit was changed to the rinsate blank value of 0.076 µg/L and the results were flagged as non-detects (U-RB). This qualifier was applied to all samples analyzed for anthracene.

### **5.2.7 Surrogate Analysis**

Surrogate compounds flourene-d<sub>10</sub>, fluoranthene-d<sub>10</sub>, and terphenyl-d<sub>14</sub> were added to all field samples, blanks, and QC samples during the analysis of PAHs. Surrogate recoveries were within the SADMP-specified and laboratory-specified control limits.

### **5.2.8 Internal Standard Evaluation**

Internal standards (IS) were added to all samples, blanks, and QC samples as required. All IS recoveries were within the SADMP-specified 50 to 100 percent limits.

### **5.2.9 Laboratory Control Sample Analyses**

ALS processed and analyzed LCS/LCSDs at the required frequency of 1 per extraction batch of 20 or fewer samples. LCS/LCSD recoveries and RPD values were within SADMP-specified criteria and/or laboratory control limits for analytes not listed in the SADMP.

### **5.2.10 Matrix Spike/Matrix Spike Duplicate Analyses**

MS/MSDs were processed during the analysis of PAH samples at the required frequency of 1 per extraction batch of 20 or fewer samples. MS/MSD recoveries and RPD values were within SADMP-specified criteria and/or laboratory control limits for analytes not listed in the SADMP.

### **5.2.11 Field Duplicate Sample Analyses**

Field duplicate pairs, BXS-1/BXS-5, were processed during the analysis of PAHs. Although some analytes were detected between the MDL and RL, all detections were either less than 5 times the concentration detected in the field rinsate blank or the difference between the sample results for specific analytes was less than the associated reporting limit. These results are noted in footnote 1 of Table D-2.

### **5.2.12 Laboratory Reporting Limits**

All reporting limit goals were met during the analysis of PAHs except where contamination in the field rinsate blank prevented adequate resolution at the target RL. Additionally, ALS reports that the detection limit for acenaphthene in the field rinsate blank was elevated due to the presence of non-target background components. The result was flagged to indicate the interferences.

### **5.2.13 Data Reporting and Additional Analytical Method Qualifications**

ALS assigned "J" qualifier flags to detected results falling between the MDL and RL. GSI agrees that these results should be qualified as estimated values because of their detection below RLs. However, in instances where these detections were less than five times that of a detection within the associated field blank, GSI changed the qualifier to a "U" flag as noted in Section 5.2.6.

## **6 Overall Assessment of Data Usability**

The data are fully usable with the addition of the qualifiers specified in Sections 5.1 and 5.2. Qualifiers added or modified during data validation are summarized in Table D-3.

No data were rejected during the validation of analytical data. This achieves the SADMP-specified completeness goal of 95 percent usable data.

## **7 References**

- Baxter. 2002. Sampling and Analysis and Data Management Plan for the Site Investigation Work Plan J.H. Baxter Arlington Facility, Revision 2. Prepared by the J.H. Baxter Project Team for EPA Region 10. May 15, 2002.
- Baxter. 2007. Remedial Action Pilot Study Performance Monitoring Plan. Prepared by the J.H. Baxter Project Team for EPA Region 10. September 2007.
- EPA. 1996. Method 8151A, Chlorinated Herbicides by GC Using Methylation or Pentafluorobenzylation Derivitization, Revision 1. December 1996.
- EPA. 1999. USEPA CLP National Functional Guidelines for Organic Data Review, EPA-540-R-99-008. October 1999.
- EPA. 2001. Region 9 Superfund Data Evaluation/Validation Guidance, Version 1, R9QA/006.1, December 2001.
- EPA. 2002. Guidance on Environmental Data Verification and Data Validation. US EPA QA/G-8. November 2002.
- EPA. 2007. Method 8270D, Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4. February 2007.
- EPA. 2014. EPA CLP National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-014-002. August 2014.

**Table D-1. Field Samples Submitted with Corresponding Laboratory Identifications**

J.H. Baxter &amp; Co.

*Arlington, Washington*

Field Sample ID	Sample Date	ALS Sample ID	Notes
BXS-1	6/6/2016	K1606164-001	
BXS-2	6/6/2016	K1606164-002	
BXS-5	6/6/2016	K1606164-003	Field duplicate for BXS-1
HCMW-7	6/6/2016	K1606161-010	PCP only
MW-2	6/5/2016	K1606161-015	
MW-3	6/5/2016	K1606161-009	
MW-15	6/6/2016	K1606161-011	
MW-16	6/5/2016	K1606161-012	
MW-17	6/5/2016	K1606161-013	
MW-18	6/6/2016	K1606161-014	
MW-22	6/6/2016	K1606161-016	PCP only
MW-23	6/5/2016	K1606161-017	PCP only
MW-24	6/5/2016	K1606161-018	PCP only
MW-25	6/5/2016	K1606161-019	PCP only
MW-26	6/5/2016	K1606161-020	PCP only, MS/MSD
MW-27	6/5/2016	K1606161-021	PCP only
MW-28	6/6/2016	K1606161-022	PCP only
MW-29	6/5/2016	K1606161-023	PCP only
MW-30	6/6/2016	K1606161-024	
MW-31	6/5/2016	K1606161-025	PCP only
MW-32	6/5/2016	K1606161-026	PCP only
MW-33	6/5/2016	K1606161-027	PCP only
MW-34	6/5/2016	K1606161-028	PCP only
MW-35	6/5/2016	K1606161-029	
MW-36	6/6/2016	K1606161-030	
MW-37	6/6/2016	K1606161-031	
MW-38	6/5/2016	K1606161-001	PCP only
MW-39	6/6/2016	K1606161-002	PCP only
MW-40	6/6/2016	K1606161-003	PCP only
MW-41	6/6/2016	K1606161-004	PCP only
MW-42	6/6/2016	K1606161-005	PCP only
MW-43	6/6/2016	K1606161-006	PCP only
MW-44	6/5/2016	K1606161-007	PCP only, field duplicate for MW-33
EW 1,2,4 Composite	6/6/2016	K1606163-004	Lab composite, MS/MSD
Field Blank Rinsate	6/6/2016	K1606161-008	

**Notes**

ALS = ALS Environmental

MS/MSD = matrix spike/matrix spike duplicate

PCP = pentachlorophenol

**Table D-2. Field Duplicate Detections**

J.H. Baxter & Co.

Arlington, Washington

Sample IDs	Analyte	Unit	Reporting Limit	Primary Sample	Field Duplicate	Relative Percent Difference	Notes
BXS-1 & BXS-5	Naphthalene	µg/L	0.049	0.049 U	0.05 U	2	1
BXS-1 & BXS-5	2-Methylnaphthalene	µg/L	0.019	0.009 J	0.0096 J	6	
BXS-1 & BXS-5	Phenanthrene	µg/L	0.076	0.076 U	0.076 U	0	1
BXS-1 & BXS-5	Anthracene	µg/L	0.048	0.048 U	0.048 U	0	1
BXS-1 & BXS-5	Pentachlorophenol	µg/L	2.5	60	59	2	2
MW-33 & MW-44	Pentachlorophenol	µg/L	1.3	9.9	10	1	

**Notes**

ug/L = micrograms per liter

J = Result is an estimated concentration that is less than the method reporting limit, but greater than or equal to the method detection limit

U = Analyte was not detected above the reported sample quantification limit.

1 The difference between the detected results is less than the associated reporting limit. Detection of analyte within sample is not distinguishable from contamination present in field rinsate blank.

2 Samples required a dilution due to elevated levels of target compound

**Table D-3. Qualifiers Added or Modified During Validation**

J.H. Baxter & Co.  
Arlington, Washington

Sample ID	Analyte	Unit	Result	Qualifier	Reason Codes
BXS-1	Naphthalene	ug/L	0.049	U	RB
BXS-1	Phenanthrene	ug/L	0.076	U	RB
BXS-1	Anthracene	ug/L	0.048	U	RB
BXS-2	Phenanthrene	ug/L	0.076	U	RB
BXS-2	Anthracene	ug/L	0.048	U	RB
BXS-2	Fluorene	ug/L	0.019	U	RB
BXS-2	Naphthalene	ug/L	0.033	U	RB
BXS-2	Pentachlorophenol	ug/L	1.3	U	RB
BXS-5	Phenanthrene	ug/L	0.076	U	RB
BXS-5	Anthracene	ug/L	0.048	U	RB
BXS-5	Naphthalene	ug/L	0.050	U	RB
HCMW-7	Pentachlorophenol	ug/L	1.3	U	RB
MW-2	Naphthalene	ug/L	0.049	U	RB
MW-2	Phenanthrene	ug/L	0.076	U	RB
MW-2	Anthracene	ug/L	0.048	U	RB
MW-2	Pentachlorophenol	ug/L	1.3	U	RB
MW-3	Naphthalene	ug/L	0.049	U	RB
MW-3	Phenanthrene	ug/L	0.076	U	RB
MW-3	Anthracene	ug/L	0.048	U	RB
MW-15	Naphthalene	ug/L	0.049	U	RB
MW-15	Phenanthrene	ug/L	0.076	U	RB
MW-15	Anthracene	ug/L	0.048	U	RB
MW-15	Acenaphthylene	ug/L	0.019	U	RB
MW-15	Pentachlorophenol	ug/L	2.9	U	RB
MW-16	Naphthalene	ug/L	0.049	U	RB
MW-16	Phenanthrene	ug/L	0.076	U	RB
MW-16	Anthracene	ug/L	0.048	U	RB
MW-16	Pentachlorophenol	ug/L	1.3	U	RB
MW-17	Naphthalene	ug/L	0.049	U	RB
MW-17	Phenanthrene	ug/L	0.076	U	RB
MW-17	Anthracene	ug/L	0.048	U	RB
MW-17	Pentachlorophenol	ug/L	1.3	U	RB
MW-18	Naphthalene	ug/L	0.049	U	RB
MW-18	Phenanthrene	ug/L	0.076	U	RB
MW-18	Anthracene	ug/L	0.048	U	RB
MW-18	Pentachlorophenol	ug/L	1.3	U	RB
MW-26	Pentachlorophenol	ug/L	1.3	U	RB
MW-27	Pentachlorophenol	ug/L	1.3	U	RB
MW-28	Pentachlorophenol	ug/L	1.3	U	RB
MW-29	Pentachlorophenol	ug/L	1.3	U	RB
MW-30	Fluorene	ug/L	0.019	U	RB
MW-30	Phenanthrene	ug/L	0.076	U	RB

**Table D-3. Qualifiers Added or Modified During Validation**

J.H. Baxter & Co.  
Arlington, Washington

Sample ID	Analyte	Unit	Result	Qualifier	Reason Codes
MW-30	Anthracene	ug/L	0.048	U	RB
MW-30	Naphthalene	ug/L	0.049	U	RB
MW-30	Pentachlorophenol	ug/L	1.3	U	RB
MW-31	Pentachlorophenol	ug/L	1.3	U	RB
MW-34	Pentachlorophenol	ug/L	1.3	U	RB
MW-35	Naphthalene	ug/L	0.049	U	RB
MW-35	Phenanthrene	ug/L	0.076	U	RB
MW-35	Anthracene	ug/L	0.048	U	RB
MW-35	Pentachlorophenol	ug/L	1.3	U	RB
MW-36	Acenaphthylene	ug/L	0.019	U	RB
MW-36	Phenanthrene	ug/L	0.076	U	RB
MW-36	Anthracene	ug/L	0.048	U	RB
MW-36	Fluorene	ug/L	0.019	U	RB
MW-36	Naphthalene	ug/L	0.088	U	RB
MW-37	Phenanthrene	ug/L	0.076	U	RB
MW-37	Anthracene	ug/L	0.048	U	RB
MW-37	Naphthalene	ug/L	0.049	U	RB
MW-37	Pentachlorophenol	ug/L	1.5	U	RB
MW-38	Pentachlorophenol	ug/L	1.3	U	RB
MW-43	Pentachlorophenol	ug/L	1.3	U	RB

**Notes**

μg/L = micrograms per liter

**Qualifier Definitions**

U = Analyte was not detected above the reported sample quantification limit.

**Reason Code Definitions**

RB = The analyte was detected in the sample and the associated rinsate blank. The sample concentration is less than five times the concentration detected in the rinsate blank. Or the RL was elevated to the value detected in the field/method blank.